AN

HISTORY

OF THE

EARTH,

AND

ANIMATED NATURE.

BY OLIVER GOLDSMITH.

IN EIGHT VOLUMES.

THE SECOND EDITION.

VOL. IV.

LONDON,

Printed for J. NOURSE, in the STRAND,
BOOKSELLER TO HIS MAJESTY.

MDCCLXXIX.

CONTENTS.

CHAP. I. OF Animals of the Hare-Kind — Page 1
The Rabbit — — 15
The Squirrel — 24
The Flying Squirrel — 34
The Marmout — 37
The Agouti — — 48
The Paca — — 52
The Guinea Pig — 55
II. Of Animals of the Rat Kind 64
The Mouſe — 72
The Dormouſe — 76
The Muſk Rat — 78
The Cricetus — 81
The Leming — 84
The Mole — 90
III. Of Animals of the Hedge-Hog, or Prickly Kind — 99
The Tanrec and Tendrac — 105
Porcupine — — 107
IV. Of Quadrupedes covered with Scales or Shells, inſtead of Hair 116
The Armadilla, or Tatou 124
V. Of Animals of the Bat Kind 134

CONTENTS.

	Page
VI. Of Amphibious Quadrupedes	147
The Beaver —	157
The Seal — —	167
The Morſe — —	181
The Manati — —	182
VII. Of Animals of the Monkey Kind	187
The Baboon — —	208
The Monkey — —	216
Of the Maki — —	238
Of the Oppoſſum, and its Kinds	241
VIII. Of the Elephant —	252
IX. Of the Rhinoceros —	285
X. The Hippopotamos —	292
XI. The Camelopard —	298
XII. The Camel and Dromedary	302
XIV. The Lama —	312
XV. The Nyl-ghau —	318
XVI. The Bear — —	321
XVII. The Badger — —	328
XVIII. The Tapir —	330
XIX. The Racoon —	332
XX. The Coatimondi —	335
XXI. Of the Ant-Bear —	337
XXII. Of the Sloth —	342
XXIII. The Gerbua —	347

AN

AN HISTORY OF ANIMALS.

CHAP. I.

Of Animals of the Hare Kind.

HAVING deſcribed in the laſt chapter a tribe of minute, fierce, rapacious animals, I come now to a race of minute animals, of a more harmleſs and gentle kind, that, without being enemies to any, are preyed upon by all. As Nature has fitted the former for hoſtility, ſo it has entirely formed the latter for evaſion; and as the one kind ſubſiſt by their courage and activity, ſo the other find ſafety from their ſwiftneſs and their fears. The Hare is the ſwifteſt animal in the world for the time it continues; and few quadrupedes can overtake even the

rabbit when it has but a ſhort way to run. To this claſs alſo we may add the ſquirrel, ſomewhat reſembling the hare and rabbit in its form and nature, and equally pretty, inoffenſive, and pleaſing.

If we were methodically to diſtinguiſh animals of the hare kind from all others, we might ſay that they have but two cutting teeth above and two below, that they are covered with a ſoft downy fur, and that they have a buſhy tail. The combination of theſe marks might perhaps diſtinguiſh them tolerably well; whether from the rat, the beaver, the otter, or any other moſt nearly approaching in form. But, as I have declined all method that rather tends to embarraſs hiſtory than enlighten it, I am contented to claſs theſe animals together for no very preciſe reaſon, but becauſe I find a general reſemblance between them in their natural habits, and in the ſhape of their heads and body. I call a Squirrel an animal of the hare kind, becauſe it is ſomething like a hare. I call the Paca of the ſame kind, merely becauſe it is more like a rabbit than any other animal I know of. In ſhort, it is fit to erect ſome particular ſtandard in the imagination of the reader, to refer him to ſome animal that he knows, in order to direct him in conceiving the figure of

ſuch as he does not know. Still, however, he ſhould be apprized that his knowledge will be defective without an examination of each particular ſpecies; and that ſaying an animal is of this or that particular kind is but a very trifling part of its hiſtory.

Animals of the hare kind, like all others that feed entirely upon vegetables, are inoffenſive and timorous. As Nature furniſhes them with a moſt abundant ſupply, they have not that rapacity after food remarkable in ſuch as are often ſtinted in their proviſion. They are extremely active and amazingly ſwift, to which they chiefly owe their protection; for being the prey of every voracious animal, they are inceſſantly purſued. The hare, the rabbit, and the ſquirrel, are placed by Pyerius, in his Treatiſe of Ruminating Animals, among the number of thoſe that chew the cud; but how far this may be true I will not pretend to determine. Certain it is that their lips continually move whether ſleeping or waking. Neverthelеſs, they chew their meat very much before they ſwallow it, and for that reaſon I ſhould ſuppoſe that it does not want a ſecond maſtication. All theſe animals uſe their fore-paws like hands; they are remarkably ſalacious, and are furniſhed by Nature with more ample powers than moſt others for the buſineſs of pro-

pagation. They are ſo very prolific, that were they not thinned by the conſtant depredations made upon them by moſt other animals, they would quickly over-run the earth.

Of all theſe the hare is the largeſt, the moſt perſecuted, and the moſt timorous; all its muſcles are formed for ſwiftneſs; and all its ſenſes ſeem only given to direct its flight. It has very large prominent eyes, placed backwards in its head, ſo that it can almoſt ſee behind it as it runs. Theſe are never wholly cloſed; but as the animal is continually upon the watch, it ſleeps with them open. The ears are ſtill more remarkable for their ſize; they are moveable and capable of being directed to every quarter; ſo that the ſmalleſt ſounds are readily received, and the animal's motions directed accordingly. The muſcles of the body are very ſtrong, and without fat, ſo that it may be ſaid to carry no ſuperfluous burthen of fleſh about it; the hinder feet are longer than the fore, which ſtill adds to the rapidity of its motions; and almoſt all animals that are remarkable for their ſpeed, except the horſe, are formed in the ſame manner.

An animal ſo well formed for a life of eſcape might be ſuppoſed to enjoy a ſtate of tolerable ſecurity; but as every rapacious creature is its

enemy, it but very ſeldom lives out its natural term. Dogs of all kinds purſue it by inſtinct, and follow the hare more eagerly than any other animal. The cat and the weaſel kinds are continually lying in ambuſh, and practiſing all their little arts to ſeize it; birds of prey are ſtill more dangerous enemies, as againſt them no ſwiftneſs can avail, nor retreat ſecure; but man, an enemy far more powerful than all, prefers its fleſh to that of other animals, and deſtroys greater numbers than all the reſt. Thus purſued and perſecuted on every ſide, the race would long ſince have been totally extirpated, did it not find a reſource in its amazing fertility.

The hare multiplies exceedingly; it is in a ſtate of engendering at a few months old; the females go with young but thirty days, and generally bring forth three or four at a time*. As ſoon as they have produced their young they are again ready for conception, and thus do not loſe any time in continuing the breed. But they are in another reſpect fitted in an extraordinary manner for multiplying their kind; for the female, from the conformation of her womb, is often ſeen to bring forth, and yet to continue pregnant at the ſame time; or, in other words, to have young ones of different ages in her

* Buffon. vol. xiii. p. 12.

womb together. Other animals never receive the male when pregnant, but bring forth their young at once. But it is frequently different with the hare; the female often, though already impregnated, admitting the male, and thus receiving a ſecond impregnation. The reaſon of this extraordinary circumſtance is, that the womb in theſe animals is divided in ſuch a manner that it may be conſidered as a double organ, one ſide of which may be filled while the other remains empty. Thus theſe animals may be ſeen to couple at every period of their pregnancy, and even while they are bringing forth young laying the foundation of another brood.

The young of theſe animals are brought forth with their eyes open, and the dam ſuckles them for twenty days, after which they leave her, and ſeek out for themſelves*. From this we obſerve, that the education theſe animals receive is but trifling, and the family connexion but of ſhort duration. In the rapacious kinds the dam leads her young forth for months together; teaches them the arts of rapine; and, although ſhe wants milk to ſupply them, yet keeps them under her care until they are able to hunt for themſelves. But a long connexion of this kind would be very unneceſſary as well

* Buffon, vol. xiii. p. 12.

as dangerous to the timid animals we are describing; their food is easily procured; and their associations, instead of protection, would only expose them to their pursuers. They seldom, however, separate far from each other, or from the place where they were produced; but make each a form at some distance, having a predilection rather for the place than each other's society. They feed during the night rather than by day, chusing the more tender blades of grass, and quenching their thirst with the dew. They live also upon roots, leaves, fruits and corn, and prefer such plants as are furnished with a milky juice. They also strip the bark of trees during the winter, there being scrace any that they will not feed on, except the lime or the alder. They are particularly fond of birch, pinks, and parsley. When they are kept tame, they are fed with lettuce and other garden herbs; but the flesh of such as are thus brought up is always indifferent.

They sleep or repose in their forms by day, and may be said to live only by night *. It is then that they go forth to feed and couple. They do not pair, however, but in the rutting season, which begins in February; the male pursues and discovers the female by the sagacity

* Buffon, vol. xiii. p. 12.

of its noſe. They are then ſeen, by moonlight, playing, ſkipping, and purſuing each other; but the leaſt motion, the ſlighteſt breeze, the falling of a leaf is ſufficient to diſturb their revels; they inſtantly fly off, and each takes a ſeparate way.

As their limbs are made for running, they eaſily outſtrip all other animals in the beginning; and could they preſerve their ſpeed it would be impoſſible to overtake them; but as they exhauſt their ſtrength at their firſt efforts, and double back to the place they were ſtarted from, they are more eaſily taken than the fox, which is a much ſlower animal than they. As their hind legs are longer than the fore, they always chuſe to turn up hill, by which the ſpeed of their purſuers is diminiſhed while theirs remains the ſame. Their motions are alſo without any noiſe, as they have the ſole of the foot furniſhed with hair; and they ſeem the only animals that have hair on the inſide of their mouths.

They ſeldom live above ſeven or eight years at the utmoſt; they come to their full perfection in a year; and thus multiplied by ſeven, as in other animals, gives the extent of their lives*. It is ſaid, however, that the females live longer than the males: of this Mr. Buffon makes a

* Buffon, vol. xiii. p. 12.

doubt; but I am aſſured that it is ſo. They paſs their lives, in our climate, in ſolitude and ſilence; and they ſeldom are heard to cry, except when they are ſeized or wounded. Their voice is not ſo ſharp as the note of ſome other animals, but more nearly approaching that of the ſqualling of a child. They are not ſo wild as their diſpoſitions and their habits ſeem to indicate; but are of a complying nature, and eaſily ſuſceptible of a kind of education. They are eaſily tamed. They even become fond and careſſing, but they are incapable of attachment to any particular perſon, and never can be depended upon; for, though taken never ſo young, they regain their native freedom at the firſt opportunity. As they have a remarkable good ear, and ſit upon their hind-legs, and uſe their fore-paws as hands, they have been taught to beat the drum, to dance to muſic, and go through the manual exerciſe.

But their natural inſtincts for their preſervation are much more extraordinary than thoſe artificial tricks that are taught them. They make themſelves a form particularly in thoſe places where the colour of the graſs moſt reſembles that of their ſkin; it is open to the ſouth in winter, and to the north in ſummer. The hare, when it hears the hounds at a di-

ſtance, flies for ſome time through a natural impulſe, without managing its ſtrength, or conſulting any other means but ſpeed for its ſafety. Having attained ſome hill or riſing-ground, and left the dogs ſo far behind, that it no longer hears their cries, it ſtops, rears on its hinder legs, and at length looks back to ſee if it has not loſt its purſuers. But theſe, having once fallen upon the ſcent, purſue ſlowly, and with united ſkill; and the poor animal ſoon again hears the fatal tidings of their approach. Sometimes, when ſore hunted, it will ſtart a freſh hare, and ſquat in the ſame form; ſometimes it will creep under the door of a ſheep-cot, and hide among the ſheep; ſometimes it will run among them, and no vigilance can drive it from the flock; ſome will enter holes like the rabbit, which the hunters call going to *vault*; ſome will go up one ſide of the hedge, and come down the other; and it has been known, that an hare ſorely hunted has got upon the top of a cut quick-ſet hedge, and run a good way thereon, by which it has effectually evaded the hounds. It is no unuſual thing alſo for them to betake themſelves to furz buſhes, and to leap from one to another, by which the dogs are frequently miſled. However, the firſt doubling an hare makes is generally a key to

all its future attempts of that kind, the latter being exactly like the former. The young hares tread heavier, and leave a ſtronger ſcent, than the old, becauſe their limbs are weaker; and the more this forlorn creature tires, the heavier it treads, and the ſtronger is the ſcent it leaves. A buck, or male hare, is known by its chuſing to run upon hard highways, feeding farther from the wood-ſides, and making its doublings of a greater compaſs than the female. The male having made a turn or two about its form, frequently leads the hounds five or ſix miles on a ſtretch; but the female keeps cloſe by ſome covert ſide, turns, croſſes, and winds among the buſhes like a rabbit, and ſeldom runs directly forward. In general, however, both male and female regulate their conduct according to the weather. In a moiſt day they hold by the highways more than at any other time, becauſe the ſcent is then ſtrongeſt upon the graſs. If they come to the ſide of a grove or ſpring, they forbear to enter, but ſquat down by the ſide thereof, until the hounds have overſhot them; and then, turning along their former path, make to their old form, from which they vainly hope for protection.

Hares are divided, by the hunters, into mountain and meaſled hares. The former are

more ſwift, vigorous, and have their fleſh better taſted; the latter chiefly frequent the marſhes, when hunted keep among low grounds, and their fleſh is moiſt, white, and flabby. When the male and female keep one particular ſpot, they will not ſuffer any ſtrange hare to make its form in the ſame quarter; ſo that it is uſually ſaid, that the more you hunt the more hares you ſhall have; for, having killed one hare, others come and take poſſeſſion of its form. Many of theſe animals are found to live in woods and thickets; but they are naturally fonder of the open country, and are conſtrained only by fear to take ſhelter in places that afford them neither a warm ſun, nor an agreeable paſture. They are, therefore, uſually ſeen ſtealing out of the edges of the wood, to taſte the graſs that grows ſhorter and ſweeter in the open fields, than under the ſhade of the trees; however, they ſeldom miſs of being purſued; and every excurſion is a new adventure. They are ſhot at by poachers; traced by their footſteps in the ſnow; caught in ſprings; dogs, birds, and cats are all combined againſt them; ants, ſnakes, and adders drive them from their forms, eſpecially in ſummer; even fleas, from which moſt other animals are free, perſecute this poor creature; and, ſo various are its enemies, that it is ſeldom permitted

to reach even that ſhort term to which it is limited by nature.

The ſoil and climate have their influence upon this animal, as well as on moſt others. In the countries bordering on the north pole, they become white in winter, and are often ſeen in great troops of four or five hundred, running along the banks of the river Irtiſh, or the Jeniſca, and as white as the ſnow they tread on. They are caught in toils for the ſake of their ſkins, which on the ſpot are ſold for leſs than ſeven ſhillings an hundred. Their fur is well known to form a conſiderable article in the hat manufacture; and we accordingly import vaſt quantities of it from thoſe countries where the hare abounds in ſuch plenty. They are found alſo entirely black, but theſe in much leſs quantity than the former *; and even ſome have been ſeen with horns, though theſe but rarely †.

The hares of the hot countries, particularly in Italy, Spain, and Barbary, are ſmaller than ours: thoſe bred in the Milaneſe country are ſaid to be the beſt in Europe ‡. There is ſcarce a country where this animal is not to be found, from the torrid zone to the neighbourhood of the polar circle. The natives of Guinea

* Klein Diſp. Quadrup. p. 52. † Johnſton de Quad. lib. ii. cap. 2. ‡ Dictionnaire Raiſonée, Lievre.

knock them on the head as they come down to the ſides of the rivers to drink. They alſo ſurround the place where they are ſeen in numbers, and clattering a ſhort ſtick, which every man carries, againſt that which the perſon next him carries, they diminiſh their circle gradually, till the hares are cooped up in the midſt. They then all together throw their ſticks in among them, and with ſuch deadly force, that they ſeldom fail of killing great numbers at a time *.

The fleſh of this animal has been eſteemed as a delicacy among ſome nations, and is held in deteſtation by others. The Jews, the ancient Britons, and the Mahometans, all conſidered it as an unclean animal, and religiouſly abſtained from it. On the contrary, there are ſcarce any other people, however barbarous, at preſent, that do not conſider it as the moſt agreeable food. Faſhion ſeems to preſide and govern all the ſenſes; what mankind at one time conſider as beautiful, fragrant, or ſavoury, may at another time, or among another nations, be regarded as deformed, diſguſtful, or ill taſted. That fleſh which the ancient Romans ſo much admired, as to call it the food of the wiſe, was, among the Jews and the Druids, thought unfit to be eaten; and even the mo-

* Hiſt. Gen. des Voyages, tom. iv. p. 171.

derns, who like the Romans consider the flesh of this animal as a delicacy, have very different ideas as to dressing it. With us it is simply served up without much seasoning; but Apicius shews us the manner of dressing an hare in true Roman taste, with parsley, rice, vinegar, cummin seed, and coriander *.

THE RABBIT.

THE Hare and the Rabbit, though so very nearly resembling each other in form and disposition, are yet distinct kinds, as they refuse to mix with each other. Mr. Buffon bred up several of both kinds in the same place; but from being at first indifferent, they soon became enemies; and their combats were generally continued until one of them was disabled or destroyed. However, though these experiments were not attended with success, I am assured that nothing is more frequent than an animal bred between these two, which, like all other mules, is marked with sterility. Nay, it has been actually known that the rabbit couples with animals of a much more distant nature; and there is at present in the Museum at Brussels, a creature covered with feathers and hair, and said to be bred between a rabbit and an hen.

* Vid. Apicii, &c.

The fecundity of the rabbit is ſtill greater than that of the hare; and if we ſhould calculate the produce from a ſingle pair, in one year, the number would be amazing. They breed ſeven times in a year, and bring eight young ones each time. On a ſuppoſition, therefore, that this happens regularly, at the end of four years, a couple of rabbits ſhall ſee a progeny of almoſt a million and an half. From hence we might juſtly apprehend being overſtocked by their encreaſe; but, happily for mankind, their enemies are numerous, and their nature inoffenſive; ſo that their deſtruction bears a near proportion to their fertility.

But although their numbers be diminiſhed by every beaſt and bird of prey, and ſtill more by man himſelf, yet there is no danger of their extirpation. The hare is a poor defenceleſs animal, that has nothing but its ſwiftneſs to depend on for ſafety; its numbers are, therefore, every day decreaſing; and in countries that are well peopled, the ſpecies are ſo much kept under, that laws are made for their preſervation. Still, however, it is moſt likely that they will be at laſt totally deſtroyed; and, like the wolf or the elk in ſome countries, be only kept in remembrance. But it is otherwiſe with the rabbit, its fecundity being greater, and its means of ſafety more certain.

The

The hare ſeems to have more various arts and inſtincts to eſcape its purſuers, by doubling, ſquatting, and winding; the rabbit has but one art of defence alone, but in that one finds ſafety; by making itſelf a hole, where it continues a great part of the day, and breeds up its young; there it continues ſecure from the fox, the hound, the kite, and every other enemy.

Nevertheleſs, though this retreat be ſafe and convenient, the rabbit does not ſeem to be naturally fond of keeping there. It loves the ſunny field and the open paſture; it ſeems to be a chilly animal, and diſlikes the coldneſs of its under-ground habitation. It is, therefore, continually out, when it does not fear diſturbance; and the female often brings forth her young, at a diſtance from the warren, in an hole, not above a foot deep at the moſt. There ſhe ſuckles them for about a month; covering them over with moſs and graſs, whenever ſhe goes to paſture, and ſcratching them up at her return. It has been ſaid, indeed, that this ſhallow hole without the warren, is made leſt the male ſhould attack and deſtroy her young; but I have ſeen the male himſelf attend the young there, lead them out to feed, and conduct them back upon the return of the dam. This external retreat ſeems a kind of

country-houfe, at a diftance from the general habitation; it is ufually made near fome fpot of excellent pafture, or in the midft of a field of fprouting corn. To this both male and female often retire from the warren; lead their young by night to the food which lies fo convenient, and, if not difturbed, continue there till they are perfectly grown up. There they find a greater variety of pafture than near the warren, which is generally eaten bare; and enjoy a warmer fun, by covering themfelves up in a fhallower hole. Whenever they are difturbed, they then forfake their retreat of pleafure, for one of fafety; they fly to the warren with their utmoft fpeed; and, if the way be fhort, there is fcarce any dog, how fwift foever, that can overtake them.

But it does not always happen that thefe animals are poffeffed of one of thefe external apartments; they moft ufually bring forth their young in the warren, but always in a hole, feparate from the male. On thefe occafions, the female digs herfelf an hole *, different from the ordinary one, by being more intricate; at the bottom of which fhe makes a more ample apartment. This done, fhe pulls off from her belly a goodquantity of her hair, with which fhe

* Buffon.

makes a kind of bed for her young. During the two firſt days ſhe never leaves them; and does not ſtir out but to procure nouriſhment, which ſhe takes with the utmoſt diſpatch; in this manner ſuckling her young, for near ſix weeks, until they are ſtrong, and able to go abroad themſelves. During all this time, the male ſeldom viſits their ſeparate apartment; but when they are grown up, ſo as to come to the mouth of the hole, he then ſeems to acknowledge them as his offspring, takes them between his paws, ſmooths their ſkin, and licks their eyes; all of them, one after the other, have an equal ſhare in his careſſes.

In this manner the rabbit, when wild, conſults its pleaſure and its ſafety; but thoſe that are bred up tame, do not take the trouble of digging an hole, conſcious of being already protected. It has alſo been obſerved*, that when people, to make a warren, ſtock it with tame rabbits, theſe animals, having been unaccuſtomed to the art of ſcraping an hole, continue expoſed to the weather, and every other accident, without ever burrowing. Their immediate offspring alſo are equally regardleſs of their ſafety; and it is not till after two or three generations, that theſe animals begin to find

* Buffon.

the neceſſity and convenience of an aſylum, and practiſe an art which they could only learn from nature.

Rabbits of the domeſtic breed, like all other animals that are under the protection of man, are of various colours; white, brown, black, and mouſe-colour. The black are the moſt ſcarce; the brown, white, and mouſe-colour, are in greater plenty. Moſt of the wild rabbits are of a brown, and it is the colour which prevails among the ſpecies; for, in every neſt of rabbits, whether the parents be black or white, there are ſome brown ones found of the number. But, in England, there are many warrens ſtocked with the mouſe-colour kinds, which ſome ſay came originally from an iſland in the river Humber, and which ſtill continue their original colour, after a great number of ſucceſſive generations. A gentleman*, who bred up tame rabbits for his amuſement, gives the following account of their production. I began, ſays he, by having but one male and female only; the male was entirely white, and the female brown; but, in their poſterity, the number of the brown by far exceeded thoſe of any other colour: there were ſome white, ſome party-coloured, and ſome black. It is ſur-

* Mr. Moutier, as quoted by Mr. Buffon.

prizing how much the deſcendants were obedient and ſubmiſſive to their common parent; he was eaſily diſtinguiſhed from the reſt by his ſuperior whiteneſs; and, however numerous the other males were, this kept them all in ſubjection. Whenever they quarrelled among each other, either for their females or proviſions, as ſoon as he heard the noiſe he ran up to them with all diſpatch; and, upon his appearance, all was inſtantly reduced to peace and order. If he caught any of them in the fact, he inſtantly puniſhed them, as an example to the reſt. Another inſtance of his ſuperiority was, that having accuſtomed them to come to me with the call of a whiſtle, the inſtant this ſignal was given, I ſaw him marſhalling them up, leading them the foremoſt, and then ſuffering them all to file off before him.

The rabbit*, though leſs than the hare, generally lives longer. As theſe animals paſs the greater part of their lives in their burrow, where they continue at eaſe and unmoleſted, they have nothing to prevent the regularity of their health, or the due courſe of their nouriſhment. They are, therefore, generally found fatter than the hare; but their fleſh is, notwithſtanding, much leſs delicate. That of the

* Mr. Mortier, as quoted by Mr. Buffon.

old ones, in particular, is hard, tough and dry; but it is ſaid, that, in warmer countries, they are better taſted. This may very well be, as the rabbit, though ſo very plenty in Great Britain and Ireland, is, nevertheleſs, a native of the warmer climates; and has been originally imported into theſe kingdoms, from Spain. In that country, and in ſome of the iſlands in the Mediterranean, we are told, that they once multiplied in ſuch numbers as to prove the greateſt nuiſance to the natives. They at firſt demanded military aid to deſtroy them; but ſoon after they called in the aſſiſtance of ferrets, which originally came from Africa, and theſe, with much more eaſe and expedition, contrived to leſſen the calamity. In fact, rabbits are found to love a warm climate, and to be incapable of bearing the cold of the north; ſo that in Sweden they are obliged to be littered in the houſes. It is otherwiſe in all the tropical climates, where they are extremely common, and where they ſeldom burrow as with us. The Engliſh counties that are moſt noted for theſe animals, are Lincolnſhire, Norfolk, and Cambridgeſhire. They delight in grounds of a ſandy ſoil, which are warmer than thoſe of clay; and which alſo furniſh a ſofter and finer paſture.

The tame rabbits are larger than the wild ones, from their taking more nouriſhment, and uſing leſs exerciſe; but their fleſh is not ſo good, being more inſipid and ſofter. In order to improve it, they are chiefly fed upon bran, and are ſtinted in their water; for, if indulged in too great a plenty of moiſt food, they are apt, as the feeders expreſs it, to grow rotten. The hair or fur is a very uſeful commodity, and is employed in England for ſeveral purpoſes, as well when the ſkin is dreſſed with it on, as when it is pulled off. The ſkins, eſpecially the white, are uſed for lining cloaths, and are conſidered as a cheap imitation of ermine. The ſkin of the male is uſually preferred, as being the moſt laſting, but it is coarſer; that on the belly in either ſex, is the beſt and fineſt. But the chief uſe made of rabbit's fur, is in the manufacture of hats; it is always mixed, in certain proportions, with the fur of the beaver; and it is ſaid to give the latter more ſtrength and conſiſtence.

The Syrian rabbit, like all other animals bred in that country, is remarkable for the length of its hair; it falls along the ſides in wavy wreaths, and is, in ſome places, curled at the end, like wool; it is ſhed once a year in large maſſes; and it often happens that the rabbit, dragging a

part of its robe on the ground, appears as if it had got another leg, or a longer tail. There are no rabbits naturally in America; however, thoſe that have been carried from Europe, are found to multiply in the Weſt-India iſlands in great abundance. In other parts of that continent, they have animals that in ſome meaſure reſemble the rabbits of Europe; and which moſt European travellers have often called hares or rabbits, as they happened to be large or ſmall. Their giving them even the name will be a ſufficient excuſe for my placing them among animals of the hare kind; although they may differ in many of the moſt eſſential particulars. But before we go to the new continent, we will firſt examine ſuch as bear even a diſtant reſemblance to the hare kind at home.

THE SQUIRREL.

THERE are few readers that are not as well acquainted with the figure of a Squirrel as that of the rabbit; but ſuppoſing it unknown to any, we might give them ſome idea of its form, by comparing it to a rabbit, with ſhorter ears, and a longer tail. The tail, indeed, is alone ſufficient to diſtinguiſh it from all others, as it is extremely long, beautiful and buſhy;

ſpreading like a fan, and which, when thrown up behind, covers the whole body. This ſerves the little animal for a double purpoſe; when erected, it ſerves, like an umbrella, as a ſecure protection from the injuries of the heat and cold; and when extended, it is very inſtrumental in promoting theſe vaſt leaps that the ſquirrel takes from tree to tree: nay, ſome aſſert that it anſwers ſtill a third purpoſe, and when the ſquirrel takes water, which it ſometimes does upon a piece of bark, that its tail ſerves it inſtead of a ſail*.

There are few wild animals in which there are ſo many varieties as in the ſquirrel. The *common ſquirrel* is of the ſize of a ſmall rabbit, and is rather of a more reddiſh brown. The belly and breaſt are white; and the ears beautifully ornamented with long tufts of hair, of a deeper colour than that on the body. The eyes are large, black and lively; the legs are ſhort and muſcular, like thoſe of the rabbit; but the toes longer, and the claws ſharper, ſo as to fit it for climbing. When it eats, or dreſſes itſelf, it ſits erect, like the hare or rabbit, making uſe of its fore legs as hands; and chiefly reſides in trees. The *grey Virginian ſquirrel*, which Mr. Buffon calls the Petit Gris, is

* Klein. Linnæus.

larger than a rabbit, and of a greyiſh colour. Its body and limbs are thicker than thoſe of the common ſquirrel; and its ears are ſhorter, and without tufts at the point. The upper part of the body, and external part of the legs, are of a fine whitiſh grey, with a beautiful red ſtreak on each ſide lengthways. The tail is covered with very long grey hair, variegated with black and white towards the extremity. This variety ſeems to be common to both continents; and in Sweden is ſeen to change colour in winter. The *Barbary ſquirrel*, of which Mr. Buffon makes three varieties, is of a mixed colour, between red and black. Along the ſides there are white and brown lines, which render this animal very beautiful; but what ſtill adds to its elegance is, that the belly is of a ſky blue, ſurrounded with white. Some of theſe hold up the tail erect; and others throw it forward over their body. The *Siberian white ſquirrel* is of the ſize of a common ſquirrel. The *Carolina black ſquirrel* is much bigger than the former, and ſometimes tipt with white at all the extremities. The *Braſilian ſquirrel*, which Mr. Buffon calls the Coquallin, is a beautiful animal of this kind, and very remarkable for the variety of its colours. Its belly is of a bright yellow; its head and body variegated with white, black,

brown and orange colour. It wants the tufts at the extremity of its ears; and does not climb trees, as moſt of the kind are ſeen to do. To this liſt may be added the *little ground ſquirrel of Carolina*, of a reddiſh colour, and blackiſh ſtripes on each ſide; and, like the former, not delighting in trees. Laſtly, the *ſquirrel of New Spain*, which is of a deep iron-grey colour, with ſeven longitudinal whitiſh ſtreaks along the ſides of the male, and five along thoſe of the female. As for the flying ſquirrels, they are a diſtinct kind, and ſhall be treated of by themſelves.

Theſe, which I ſuppoſe to be but a few of the numerous varieties of the ſquirrel, ſufficiently ſerve to ſhew how extenſively this animal is diffuſed over all parts of the world. It is not to be ſuppoſed, however, that every variety is capable of ſuſtaining every climate; for few animals are ſo tender, or ſo little able to endure a change of abode, as this. Thoſe bred in the tropical climates, will only live near a warm ſun; while, on the contrary, the ſquirrel of Siberia will ſcarce endure the temperature of ours. Theſe varieties do not only differ in their conſtitutions and colour, but in their diſpoſitions alſo; for while ſome live on the tops of trees, others feed, like rabbits,

on vegetables below. Whether any of theſe, ſo variouſly coloured, and ſo differently diſpoſed, would breed among each other, we cannot tell: and ſince, therefore, we are left in uncertainty upon this point, we are at liberty either to conſider each as a diſtinct ſpecies by itſelf; or only a variety, that accident might have originally produced, and that the climate or ſoil might have continued. For my own part, as the original character of the ſquirrel is ſo ſtrongly marked upon them all, I cannot help conſidering them in the latter point of view; rather as the common deſcendants of one parent, than originally formed with ſuch diſtinct ſimilitudes.

The ſquirrel is a beautiful little animal *, which is but half ſavage; and which, from the gentleneſs and innocence of its manners, deſerves our protection. It is neither carnivorous nor hurtful; its uſual food is fruits, nuts and acorns; it is cleanly, nimble, active, and induſtrious; its eyes are ſparkling, and its phyſiognomy marked with meaning. It generally, like the hare and rabbit, ſits up on its hinder legs, and uſes the fore paws as hands; theſe have five claws or toes, as they are called, and one of them is ſeparated from the reſt like a

* Buffon.

thumb. This animal ſeems to approach the nature of birds, from its lightneſs, and ſurprizing agility on the tops of trees. It ſeldom deſcends to the ground, except in caſe of ſtorms, but jumps from one branch to another; feeds, in ſpring, on the buds and young ſhoots; in ſummer, on the ripening fruits; and particularly the young cones of the pine-tree. In autumn it has an extenſive variety to feaſt upon; the acorn, the philberd, the cheſnut, and the wilding. This ſeaſon of plenty, however, is not ſpent in idle enjoyment; the provident little animal gathers at that time its proviſions for the winter; and cautiouſly foreſees the ſeaſon when the foreſt ſhall be ſtripped of its leaves and fruitage.

Its neſt is generally formed among the large branches of a great tree, where they begin to fork off into ſmall ones. After chuſing the place where the timber begins to decay, and an hollow may the more eaſily be formed, the ſquirrel begins by making a kind of level between the forks; and then bringing moſs, twigs, and dry leaves, it binds them together with great art, ſo as to reſiſt the moſt violent ſtorm. This is covered up on all ſides; and has but a ſingle opening at top, which is juſt large enough to admit the little animal; and

this opening is itſelf defended from the weather by a kind of canopy, made in the faſhion of a cone, ſo that it throws off the rain, though never ſo heavy. The neſt thus formed, with a very little opening above, is, nevertheleſs, very commodious and roomy below; ſoft, well knit together, and every way convenient and warm. In this retreat the little animal brings forth its young, ſhelters itſelf from the ſcorching heat of the ſun, which it ſeems to fear, and from the ſtorms and the inclemency of winter, which it is ſtill leſs capable of ſupporting. Its proviſion of nuts and acorns is ſeldom in its neſt, but in the hollows of the tree, laid up carefully together, and never touched but in caſes of neceſſity. Thus one ſingle tree ſerves for a retreat and a ſtore-houſe; and without leaving it during the winter, the ſquirrel poſſeſſes all thoſe enjoyments that its nature is capable of receiving. But it ſometimes happens that its little manſion is attacked by a deadly and powerful foe. The martin goes often in queſt of a retreat for its young, which it is incapable of making for itſelf; for this reaſon it fixes upon the neſt of a ſquirrel, and, with double injuſtice, deſtroys the tenant, and then takes poſſeſſion of the manſion.

However, this is a calamity that but ſeldom

happens: and, of all other animals, the ſquirrel leads the moſt frolickſome playful life; being ſurrounded with abundance, and having few enemies to fear. They are in heat early in the ſpring; when, as a modern naturaliſt ſays*, it is very diverting to ſee the female feigning an eſcape from the purſuit of two or three males, and to obſerve the various proofs which they give of their agility, which is then exerted in full force. Nature ſeems to have been particular in her formation of theſe animals for propagation; however, they ſeldom bring forth above four or five young at a time; and that but once a year. The time of their geſtation ſeems to be about ſix weeks; they are pregnant in the beginning of April, and bring forth about the middle of May.

The ſquirrel is never found in the open fields, nor yet in copſes or underwoods; it always keeps in the midſt of the talleſt trees, and, as much as poſſible, ſhuns the habitations of men. It is extremely watchful; if the tree in which it reſides be but touched at the bottom, the ſquirrel inſtantly takes the alarm, quits its neſt, at once flies off to another tree; and thus travels, with great eaſe, along the tops of the foreſt, until it finds itſelf perfectly out of danger.

* British Zoology.

In this manner it continues for ſome hours at a diſtance from home, until the alarm be paſt away; and then it returns, by paths that to all quadrupedes but itſelf are utterly impaſſable. Its uſual way of moving is by bounds; theſe it takes from one tree to another, at forty feet diſtance; and if at any time it is obliged to deſcend, it runs up the ſide of the next tree with amazing facility. It has an extremely ſharp piercing note, which moſt uſually expreſſes pain; it has another, more like the purring of a cat, which it employs when pleaſed; at leaſt it appeared ſo in that from whence I have taken a part of this deſcription.

In Lapland, and the extenſive foreſts to the north, the ſquirrels are obſerved to change their habitation, and to remove in vaſt numbers from one country to another. In theſe migrations they are generally ſeen by thouſands, travelling directly forward; while neither rocks, foreſts, nor even the broadeſt waters can ſtop their progreſs. What I am going to relate, appears ſo extraordinary, that were it not atteſted by numbers of the moſt credible hiſtorians, among whom are Klein and Linnæus, it might be rejected, with that ſcorn with which we treat impoſture or credulity; however, nothing can be more true than that when theſe

animals,

De Seve del. Js. Taylor sculp

The Squirrel.

animals, in their progreſs, meet with broad rivers, or extenſive lakes, which abound in Lapland, they take a very extraordinary method of croſſing them. Upon approaching the banks, and perceiving the breadth of the water, they return, as if by common conſent, into the neighbouring foreſt, each in queſt of a piece of bark, which anſwers all the purpoſes of boats for wafting them over. When the whole company are fitted in this manner, they boldly commit their little fleet to the waves; every ſquirrel ſitting on its own piece of bark, and fanning the air with its tail, to drive the veſſel to its deſired port. In this orderly manner they ſet forward, and often croſs lakes ſeveral miles broad. But it too often happens that the poor mariners are not aware of the dangers of their navigation; for although at the edge of the water it is generally calm, in the midſt it is always more turbulent. There the ſlighteſt additional guſt of wind overſets the little ſailor and his veſſel together. The whole navy, that but a few minutes before rode proudly and ſecurely along, is now overturned, and a ſhipwreck of two or three thouſand ſail enſues. This, which is ſo unfortunate for the little animal, is generally the moſt lucky accident in the world for the Laplander on the ſhore; who gathers up the

dead bodies as they are thrown in by the waves, eats the fleſh, and ſells the ſkins for about a ſhilling the dozen *.

The ſquirrel is eaſily tamed, and it is then a very familiar animal. It loves to lie warm, and will often creep into a man's pocket or his boſom. It is uſually kept in a box, and fed with hazle nuts. Some find amuſement in obſerving with what eaſe it bites the nut open, and eats the kernel. In ſhort, it is a pleaſing pretty little domeſtic; and its tricks and habitudes may ſerve to entertain a mind unequal to ſtronger operations.

THE FLYING SQUIRREL.

Mr. Ray was juſtly of opinion, that the Flying Squirrel might more properly be ſaid to be of the rat kind, becauſe its fur is ſhorter than in other ſquirrels, and its colours alſo more nearly approach the former. However, as mankind have been content to claſs it among the ſquirrels, it is ſcarcely worth making a new diſtinction in its favour. This little animal, which is frequently brought over to England, is leſs than a common ſquirrel, and bigger than a field mouſe. Its ſkin is very ſoft, and elegantly adorned with a dark fur in ſome places, and light grey in others.

* Oeuvres de Regnard.

It has large prominent black and very ſparkling eyes, ſmall ears, and very ſharp teeth, with which it gnaws any thing quickly. When it does not leap, its tail, which is pretty enough, lies cloſe to its back; but when it takes its ſpring, the tail is moved backwards and forwards from ſide to ſide. It is ſaid to partake ſomewhat of the nature of the ſquirrel, of the rat, and of the dormouſe; but that in which it is diſtinguiſhed from all other animals, is its peculiar conformation for taking thoſe leaps that almoſt look like flying. It is, indeed, amazing to ſee it at one bound dart above an hundred yards, from one tree to another. They are aſſiſted in this ſpring by a very peculiar formation of the ſkin, that extends from the fore-feet to the hinder; ſo that when the animal ſtretches its fore-legs forward and its hind-legs backward, this ſkin is ſpread out between them, ſomewhat like that between the legs of a bat. The ſurface of the body being thus encreaſed, the little animal keeps buoyant in the air until the force of its firſt impulſion is expired, and then it deſcends. This ſkin, when the creature is at reſt, or walking, continues wrinkled up on its ſides; but when its limbs are extended, it forms a kind of web between them of above an inch broad on either ſide, and gives the

whole body the appearance of a ſkin floating in the air. In this manner the flying ſquirrel changes place, not like a bird, by repeated ſtrokes of its wings, but rather like a paper kite, ſupported by the expanſion of the ſurface of its body; but with this difference, however, that, being naturally heavier than the air, inſtead of mounting it deſcends; and that jump, which upon the ground would not be above forty yards, when from an higher tree to a lower may be above an hundred.

This little animal is more common in America than in Europe, but not very commonly to be ſeen in either. It is uſually found, like the ſquirrel, on the tops of trees; but, though better fitted for leaping, it is of a more torpid diſpoſition, and is ſeldom ſeen to exert its powers; ſo that it is often ſeized by the polecat and the martin. It is eaſily tamed, but apt to break away whenever it finds an opportunity. It does not ſeem fond of nuts or almonds, like other ſquirrels, but is chiefly pleaſed with the ſprouts of the birch and the cones of the pine. It is fed in its tame ſtate with bread and fruits; it generally ſleeps by day, and is always moſt active by night. Some naturaliſts gravely caution us not to let it get among our corn-fields, where they tell us it will do a great deal of damage,

by cropping the corn as ſoon as it begins to ear *!

THE MARMOUT.

FROM the deſcription of the ſquirrel and its varieties, we proceed to a different tribe of animals, no way indeed reſembling the ſquirrel, but ſtill ſomething like the rabbit and the hare. We are to keep theſe two animals ſtill in view, as the center of our compariſon; as objects to which many others may bear ſome ſimilitude, though they but little approach each other. Among the hare kind is the Marmout, which naturaliſts have placed either among the hare kind or the rat kind, as it ſuited their reſpective ſyſtems. In fact, it bears no great reſemblance to either; but of the two it approaches much nearer the hare, as well in the make of its head, as in its ſize, in its buſhy tail, and particularly in its chewing the cud, which alone is ſufficient to determine our choice in giving it its preſent ſituation. How it ever came to be degraded into the rat or the mouſe I cannot conceive, for it no way reſembles them in ſize, being near as

* He may eaſily be made tame; but he is apt to do a great deal of damage in the corn-fields, becauſe he will crop the corn as ſoon as it begins to ear.

BROOKE's NAT. HIST.

big as an hare; or in its diſpoſition, ſince no animal is more tractable, nor more eaſily tamed.

The Marmout is, as was ſaid, almoſt as big as an hare, but it is more corpulent than a cat, and has ſhorter legs. Its head pretty nearly reſembles that of an hare, except that its ears are much ſhorter. It is cloathed all over with very long hair, and a ſhorter fur below. Theſe are of different colours, black and grey. The length of the hair gives the body the appearance of greater corpulence than it really has, and at the ſame time ſhortens the feet ſo that its belly ſeems touching the ground. Its tail is tufted and well furniſhed with hair, and it is carried in a ſtraight direction with its body. It has five claws behind, and only four before. Theſe it uſes as the ſquirrel does, to carry its food to its mouth; and it uſually ſits upon its hinder parts to feed in the manner of that little animal.

The marmout is chiefly a native of the Alps; and when taken young is tamed more eaſily than any other wild animal, and almoſt as perfectly as any of thoſe that are domeſtic *. It is readily taught to dance, to wield a cudgel, and to obey the voice of its maſter. Like the cat, it

* Buffon, from whence the remainder of this deſcription is taken. *N. B.* He takes it from Geſner, vol. xvii.

has an antipathy to the dog; and when it becomes familiar to the family, and is ſure of being ſupported by its maſter, it attacks and bites even the largeſt maſtiff. From its ſquat muſcular make, it has great ſtrength joined to great agility. It has four large cutting teeth, like all thoſe of the hare kind; but it uſes them to much more advantage, ſince in this animal they are very formidable weapons of defence. However, it is in general a very inoffenſive animal; and, except its enmity to dogs, ſeems to live in friendſhip with every creature, unleſs when provoked. If not prevented, it is very apt to gnaw the furniture of an houſe, and even to make holes through wooden partitions; from whence, perhaps, it has been compared to the rat. As its legs are very ſhort, and made ſomewhat like thoſe of a bear, it is often ſeen ſitting up, and even walking on its hind-legs in like manner; but with the fore-paws, as was ſaid, it uſes to feed itſelf in the manner of a ſquirrel. Like all of the hare kind, it runs much ſwifter up hill than down; it climbs trees with great eaſe, and runs up the clefts of rocks, or the contiguous walls of houſes, with great facility. It is ludicrouſly ſaid that the Savoyards, who are the only chimney-ſweepers of Paris, have learned this

art from the marmout, which is bred in the ſame country.

Theſe animals eat indiſcriminately of whatever is preſented to them; fleſh, bread, fruits, herbs, roots, pulſe, and inſects. But they are particularly fond of milk and butter. Although leſs inclined to petty thefts than the cat, yet they always try to ſteal into the dairy, where they lap up the milk like a cat, purring all the while like that animal, as an expreſſion of their being pleaſed. As to the reſt, milk is the only liquor they like. They ſeldom drink water, and refuſe wine. When pleaſed or careſſed, they often yelp like puppies; but when irritated or frighted, they have a piercing note that hurts the ear. They are very cleanly animals, and like the cat retire upon neceſſary occaſions; but their bodies have a diſagreeable ſcent, particularly in the heat of ſummer. This tinctures their fleſh, which, being very fat and firm, would be very good, were not this flavour always found to predominate.

We have hitherto been deſcribing affections in this animal which it has in common with many others; but we now come to one which particularly diſtinguiſhes it from all others of this kind, and, indeed, from every other quadrupede, except the bat and the dormouſe.

This is its ſleeping during the winter. The marmout, though a native of the higheſt mountains, and where the ſnow is never wholly melted, nevertheleſs ſeems to feel the influence of the cold more than any other, and in a manner has all its faculties chilled up in winter. This extraordinary ſuſpenſion of life and motion for more than half the year, deſerves our wonder, and excites our attention to conſider the manner of ſuch a temporary death, and the ſubſequent revival. But firſt to deſcribe, before we attempt to diſcuſs.

The marmout, uſually, at the end of September, or the beginning of October, prepares to fit up its habitation for the winter, from which it is never ſeen to iſſue till about the beginning or the middle of April. This animal's little retreat is made with great precaution, and fitted up with art. It is an hole on the ſide of a mountain, extremely deep, with a ſpacious apartment at the bottom, which is rather longer than it is broad. In this ſeveral marmouts can reſide at the ſame time, without crowding each other, or injuring the air they breathe. The feet and claws of this animal ſeem made for digging; and, in fact, they burrow into the ground with amazing facility, ſcraping up the

earth like a rabbit, and throwing back what they have thus loosened behind them. But the form of their hole is still more wonderful; it resembles the letter Y; the two branches being two openings, which conduct into one channel, which terminates in their general apartment that lies at the bottom. As the hole is made on the declivity of a mountain, there is no part of it on a level, but the apartment at the end. One of the branches or openings issues out, sloping downwards; and this serves as a kind of sink or drain to the whole family, where they make their excrements, and where the moisture of the place is drawn away. The other branch, on the contrary, slopes upwards, and this serves as their door upon which to go out and in. The apartment at the end is very warmly stuccoed round with moss and hay, of both which they make an ample provision during the summer. As this is a work of great labour, so it is undertaken in common; some cut the finest grass, others gather it, and others take their turns to drag it into their hole. Upon this occasion, as we are told, one of them lies on its back, permits the hay to be heaped upon its belly, keeps its paws upright to make greater room; and in this manner, lying still

upon its back, it is dragged by the tail, hay and all, to their common retreat. This alſo ſome give as a reaſon for the hair being generally worn away on their backs, as is uſually the caſe; however, a better reaſon for this may be aſſigned, from their continually rooting up holes, and paſſing through narrow openings. But, be this as it will, certain it is that they all live together, and work in common to make their habitation as ſnug and convenient as poſſible. In it they paſs three parts of their lives; into it they retire when the ſtorm is high; in it they continue while it rains; there they remain when apprehenſive of danger, and never ſtir out except in fine weather, never going far from home even then. Whenever they venture abroad, one is placed as a centinel, ſitting upon a lofty rock, while the reſt amuſe themſelves in playing along the green fields, or are employed in cutting graſs and making hay for their winter's convenience. Their truſty centinel, when an enemy, a man, a dog, or a bird of prey approaches, apprizes its companions with a whiſtle, upon which they all make home, the centinel himſelf bringing up the rear.

But it muſt not be ſuppoſed that this hay is deſigned for proviſion; on the contrary, it is

always found in as great plenty in their holes at the end as at the beginning of winter; it is only ſought for the convenience of their lodging, and the advantages of their young. As to proviſion, they ſeem kindly apprized by Nature that during the winter they ſhall not want any, ſo that they make no preparations for food, though ſo diligently employed in fitting up their abode. As ſoon as they perceive the firſt approaches of the winter, during which their vital motions are to continue in ſome meaſure ſuſpended, they labour very diligently to cloſe up the two entrances of their habitation, which they effect with ſuch ſolidity, that it is eaſier to dig up the earth any where elſe than where they have cloſed it. At that time they are very fat, and ſome of them are found to weigh above twenty pounds; they continue ſo for even three months more; but by degrees their fleſh begins to waſte, and they are uſually very lean by the end of winter. When their retreat is opened, the whole family is then diſcovered, each rolled into a ball, and covered up under the hay. In this ſtate they ſeem entirely lifeleſs; they may be taken away, and even killed, without their teſtifying any great pain; and thoſe who find them in this manner carry them home, in order

to breed up the young, and eat the old ones. A gradual and gentle warmth revives them; but they would die if too ſuddenly brought near the fire, or if their juices were too quickly liquefied.

Strictly ſpeaking, ſays Mr. Buffon, theſe animals cannot be ſaid to ſleep during the winter; it may be called rather a torpor, a ſtagnation of all the faculties *. This torpor is produced by the congelation of their blood, which is naturally much colder than that of all other quadrupedes. The uſual heat of man, and other animals, is about thirty degrees above congelation; the heat of theſe is not above ten degrees. Their internal heat is ſeldom greater than that of the temperature of the air. This has been often tried by plunging the ball of the thermometer into the body of a living dormouſe, and it never roſe beyond its uſual pitch in air, and ſometimes it ſunk above a degree. It is not ſurpriſing, therefore, that theſe animals, whoſe blood is ſo cold naturally, ſhould become torpid, when the external cold is too powerful for the ſmall quantity of heat in their bodies, yet remaining; and this always happens when the thermometer is not more than ten degrees

* Buffon, vol. xvi. Loirs.

above congelation. This coldneſs Mr. Buffon has experienced in the blood of the bat, the dormouſe, and the hedge-hog, and with great juſtice he extends the analogy to the marmout, which like the reſt is ſeen to ſleep all the winter. This torpid ſtate continues as long as the cauſe which produces it continues; and it is very probable that it might be lengthened out beyond its uſual term, by artificially prolonging the cold; if, for inſtance, the animal were rolled up in wool, and placed in a cold cellar, nearly approaching to, but not quite ſo cold as an ice-houſe, for that would kill them outright, it would remain perhaps a whole year in its ſtate of inſenſibility. However this be, if the heat of the air be above ten degrees, theſe animals are ſeen to revive; and, if it be continued in that degree of temperature, they do not become torpid, but eat and ſleep at proper intervals, like all other quadrupedes whatever.

From the above account, we may form ſome conception of the ſtate in which theſe animals continue during the winter. As in ſome diſorders, where the circulation is extremely languid, the appetite is diminiſhed in proportion, ſo in theſe the blood ſcarcely moving, or only moving in the greater veſſels, they want no

nouriſhment to repair what is worn away by its motions. They are ſeen, indeed, by ſlow degrees, to become leaner in proportion to the ſlow attrition of their fluids; but this is not perceptible except at the end of ſome months. Man is often known to gather nouriſhment from the ambient air; and theſe alſo may in ſome meaſure be ſupplied in the ſame manner; and, having ſufficient motion in their fluids to keep them from putrefaction, and juſt ſufficient nouriſhment to ſupply the waſte of their languid circulation, they continue rather feebly alive than ſleeping.

Theſe animals produce but once a year, and uſually bring forth but three or four at a time. They grow very faſt, and the extent of their lives is not above nine or ten years; ſo that the ſpecies is neither numerous nor very much diffuſed. They are chiefly found in the Alps, where they ſeem to prefer the brow of the higheſt mountains to the loweſt ranges, and the ſunny ſide to that in the ſhade. The inhabitants of the country where they chiefly reſide, when they obſerve the hole, generally ſtay till winter before they think proper to open it; for if they begin too ſoon, the animal wakes, and, as it has a ſurpriſing faculty of digging,

makes its hole deeper in proportion as they follow. Such as kill it for food, uſe every art to improve the fleſh, which is ſaid to have a wild taſte, and to cauſe vomitings *. They, therefore, take away the fat, which is in great abundance, and ſalt the remainder, drying it ſomewhat in the manner of bacon. Still, however, it is ſaid to be very indifferent eating. This animal is found in Poland under the denomination of the Bobak, entirely reſembling that of the Alps, except that the latter has a toe more upon its fore-foot than the former. It is found alſo in Siberia under the name of the Jevraſka, being rather ſmaller than either of the other two. Laſtly, it is found in Canada by the appellation of the Monax, differing only from the reſt in having a blueiſh ſnout, and a longer tail.

THE AGOUTI.

FROM the marmout, which differs from the hare ſo much in the length of its fur, we go to the Agouti, another ſpecies equally differing in the ſhortneſs of its hair. Theſe bear ſome rude reſemblance to the hair and the rabbit in their form and manner of living, but ſufficiently differing to

* Dictionnaire Raiſonnée, vol. iii. p. 29.

require a particular defcription. The firft of thefe, and that the largeft, as was hinted above, is called the Agouti. This animal is found in great abundance in the fouthern parts of America, and has by fome been called the rabbit of that continent. But, though in many refpects it refembles the rabbit, yet ftill in many more it differs, and is, without all doubt, an animal peculiar to the new world only. The agouti is about the fize of a rabbit, and has a head very much refembling it, except that the ears are very fhort in comparifon. It refembles the rabbit alfo in the arched form of its back, in the hind legs being longer than the fore, and in having four great cutting teeth, two above and two below; but then it differs in the nature of its hair, which is not foft and downy as in the rabbit, but hard and briftly like that of a fucking pig, and of a reddifh brown colour. It differs alfo in the tail, which is even fhorter than in the rabbit, and entirely deftitute of hair. Laftly, it differs in the number of its toes, having but three on the hinder feet, whereas the rabbit has five. All thefe diftinctions, however, do not countervail againft its general form, which refembles that of a rabbit, and moft travellers have called it by that name.

As this animal differs in form, it differs ſtill more in habitudes and diſpoſition. As it has the hair of an hog, ſo alſo it has its voraciouſneſs *. It eats indiſcriminately of all things; and, when ſatiated, hides the remainder, like the dog or the fox, for a future occaſion. It takes a pleaſure in gnawing and ſpoiling every thing it comes near. When irritated, its hair ſtands erect along the back, and, like the rabbit, it ſtrikes the ground violently with its hind feet. It does not dig a hole in the ground, but burrows in the hollows of trees. Its ordinary food conſiſts of the roots of the country, potatoes and yams, and ſuch fruits as fall from the trees in autumn. It uſes its fore-paws like the ſquirrel, to carry its food to its mouth; and as its hind feet are longer than the fore, it runs very ſwiftly upon plain ground or up a hill, but upon a deſcent it is in danger of falling. Its ſight is excellent, and its hearing equals that of any other animal; whenever it is whiſtled to it ſtops to hearken. The fleſh of ſuch as are fat and well fed is tolerable food, although it has a peculiar taſte, and is a little tough. The French dreſs it like a ſucking pig, as we learn from Mr. Buffon's account; but the Engliſh dreſs it with a pudding in its belly, like a

* Buffon.

hare. It is hunted by dogs; and whenever it is got into a ſugar-ground, where the canes cover the place, it is eaſily overtaken, for it is embarraſſed every ſtep it takes, ſo that a man may eaſily come up with it without any other aſſiſtance. When in the open country, it uſually runs with great ſwiftneſs before the dogs until it gains its retreat, within which it continues to hide, and nothing but filling the hole with ſmoke can force it out. For this purpoſe the hunter burns faggots or ſtraw at the entrance, and conducts the ſmoke in ſuch a manner that it fills the whole cavity. While this is doing, the poor little animal ſeems ſenſible of its danger, and begs for quarter with a moſt plaintive cry, ſeldom quitting its hole till the utmoſt extremity. At laſt, when half ſuffocated, it iſſues out, and truſts once more to its ſpeed for protection. When ſtill forced by the dogs, and incapable of making good a retreat, it turns upon the hunters, and with its hair briſtling like a hog, and ſtanding upon its hind feet, it defends itſelf very obſtinately. Sometimes it bites the legs of thoſe that attempt to take it, and will take out the piece wherever it fixes its teeth *.

Its cry when diſturbed or provoked reſembles

* Ray's Synop.

that of a ſucking pig. If taken young, it is eaſily tamed, continues to play harmleſsly about the houſe, and goes out and returns of its own accord. In a ſavage ſtate it uſually continues in the woods, and the female generally chuſes the moſt obſcure parts to bring forth her young. She there prepares a bed of leaves and dry graſs, and generally brings forth two at a time. She breeds twice or thrice a year, and carries her young from one place to another, as convenience requires, in the manner of a cat. She generally lodges them when three days old in the hollow of a tree, ſuckling them but for a very ſhort time, for they ſoon come to perfection, and it ſhould conſequently follow that they ſoon grow old.

THE PACA.

THE Paca is an animal alſo of South America, very much reſembling the former, and like it has received the name of the American rabbit, but with as little propriety. It is about the ſize of a hare, or rather larger, and in figure ſomewhat like a ſucking pig, which it alſo reſembles in its grunting and its manner of eating. It is, however, moſt like the agouti, although it differs in ſeveral particulars.

Desève del. Js. Taylor sculp

The Paca.

Like the agouti, it is covered rather with coarſe hair than a downy fur. But then it is beautifully marked along the ſides with ſmall aſh-coloured ſpots, upon an amber-coloured ground; whereas the agouti is pretty much of one reddiſh colour. The paca is rather more thick and corpulent than the agouti; its noſe is ſhorter, and its hind feet have five toes; whereas the agouti has but three. As to the reſt, this animal bears ſome diſtant reſemblance to a rabbit, the ears are naked of hair and ſomewhat ſharp, the lower jaw is ſomewhat longer than the upper, the teeth, the ſhape of the head and the ſize of it, are like to thoſe of a rabbit. It has a ſhort tail likewiſe, though not tufted, and its hinder legs are longer than the fore. It alſo burrows in the ground like that animal, and from this ſimilitude alone travellers might have given it the name.

The paca does not make uſe of its fore-paws, like the ſquirrel or the agouti, to carry its food to the mouth, but hunts for it on the ground, and roots like a hog. It is generally ſeen along the banks of rivers, and is only to be found in the moiſt and warm countries of South America. It is a very fat animal, and in this reſpect much preferable to the agouti, that is moſt commonly

found lean. It is eaten, ſkin and all, like a young pig, and is conſidered as a great delicacy. Like the former little animal, it defends itſelf to the laſt extremity, and is very ſeldom taken alive. It is perſecuted not only by man, but by every beaſt and bird of prey, who all watch its motions, and, if it ventures at any diſtance from its hole, are ſure to ſeize it. But although the race of theſe little animals is thus continually deſtroyed, it finds ſome refuge in its hole, from the general combination; and breeds in ſuch numbers, that the diminution is not perceptible.

To theſe animals may be added others, very ſimilar both in form and diſpoſition; each known by its particular name in its native country, but which travellers have been contented to call rabbits or hares; of which we have but indiſtinct notice. The Tapeti, or the Braſilian rabbit, is in ſhape like our Engliſh ones, but is much leſs, being ſaid to be not above twice the ſize of a dormouſe. It is reddiſh on the forehead, and a little whitiſh under the throat. It is remarkable for having no tail; but it has long ears with whiſkers, like our rabbits, and black eyes. It does not burrow, like ours; but lives at large, like the hare.

The Aperea is alſo called by ſome the Braſi-

lian rabbit, being an animal that ſeems to partake of the nature of a rabbit and a rat. The ears are like thoſe of a rat, being ſhort and round; but the other parts are like thoſe of a rabbit, except that it has but three toes on the hinder legs, like the agouti.

To theſe imperfect ſketches of animals little known, others leſs known might be added; for as Nature becomes more diminutive, her operations are leſs attentively regarded. I ſhall only, therefore, add an animal more to this claſs, and that very well known; I mean the Guinea-pig; which Briſſon places among thoſe of the rabbit kind; and as I do not know any other ſet of animals with which it can be ſo well compared, I will take leave to follow his example.

THE GUINEA-PIG.

THE Guinea-Pig is a native of the warmer climates; but has been ſo long rendered domeſtic, and ſo widely diffuſed, that it is now become common in every part of the world. There are few unacquainted with the figure of this little animal; in ſome places it is conſidered as the principal favourite; and is often found

even to displace the lap-dog. It is less than a rabbit, and its legs are shorter; they are scarce seen, except when it moves; and the neck also, is so short, that the head seems stuck upon the shoulders. The ears are short, thin and transparent; the hair is like that of a sucking pig, from whence it has taken the name; and it wants even the vestiges of a tail. In other respects, it has some similitude to the rabbit. When it moves, its body lengthens like that animal; and when it is at rest, it gathers up in the same manner. Its nose is formed with the rabbit lip, except that its nostrils are much farther asunder. Like all other animals in a domestic state, its colours are different; some are white, some are red, and others both red and white. It differs from the rabbit in the number of its toes, having four toes on the feet before, and but three on those behind. It strokes its head with the fore feet like the rabbit; and, like it, sits upon the hind feet; for which purpose there is a naked callous skin on the back part of the legs and feet.

These animals are of all others the most helpless and inoffensive *. They are scarce possessed of courage sufficient to defend themselves

* This history is partly taken from the Amænitates Academicæ, vol. iv, p. 202.

against the meanest of all quadrupedes, a mouse. Their only animosity is exerted against each other; for they will often fight very obstinately; and the stronger is often known to destroy the weaker. But against all other aggressors, their only remedy is patience and non-resistance. How, therefore, these animals, in a savage state, could contrive to protect themselves, I have not been able to learn; as they want strength, swiftness, and even the natural instinct so common to almost every other creature.

As to their manner of living among us, they owe their lives entirely to our unceasing protection. They must be constantly attended, shielded from the excessive colds of the winter, and secured against all other domestic animals, which are apt to attack them, from every motive, either of appetite, jealousy, or experience of their pusillanimous nature. Such indeed is their stupidity, that they suffer themselves to be devoured by the cats, without resistance; and, different from all other creatures, the female sees her young destroyed without once attempting to protect them. Their usual food is bran, parsley, or cabbage leaves; but there is scarce a vegetable cultivated in our gardens that they will not gladly devour. The carrot-top is a peculiar dainty; as also sallad; and

thoſe who would preſerve their healths, would do right to vary their food; for if they be continued on a kind too ſucculent or too dry, the effects are quickly perceived upon their conſtitutions. When fed upon recent vegetables, they ſeldom drink. But it often happens that, conducted by nature, they ſeek dryer food, when the former diſagrees with them. They then gnaw cloaths, paper, or whatever of this kind they meet with; and, on theſe occaſions, they are ſeen to drink like moſt other animals, which they do by lapping. They are chiefly fond of new milk; but, in caſe of neceſſity, are contented with water.

They move pretty much in the manner of rabbits, though not near ſo ſwiftly; and when confined in a room, ſeldom croſs the floor, but generally keep along the wall. The male uſually drives the female on before him, for they never move a-breaſt together; but conſtantly the one ſeems to tread in the footſteps of the preceding. They chiefly ſeek for the darkeſt receſſes, and the moſt intricate retreats; where, if hay be ſpread as a bed for them, they continue to ſleep together, and ſeldom venture out but when they ſuppoſe all interruption removed. On thoſe occaſions they act as rabbits; they ſwiftly move forward from their bed, ſtop at

the entrance, liſten, look round, and, if they perceive the ſlighteſt approach of danger, they run back with precipitation. In very cold weather, however, they are more active, and run about in order to keep themſelves warm.

They are a very cleanly animal, and very different from that whoſe name they go by. If the young ones happen to fall into the dirt, or be any other way diſcompoſed, the female takes ſuch an averſion to them that ſhe never permits them to viſit her more. Indeed, her whole employment, as well as that of the male, ſeems to conſiſt in ſmoothing their ſkins, in diſpoſing their hair, and improving its gloſs. The male and female take this office by turns; and when they have thus bruſhed up each other, they then beſtow all their concern upon their young, taking particular care to make their hair lie ſmooth, and biting them if they appear refractory. As they are ſo ſolicitous for elegance themſelves, the place where they are kept muſt be regularly cleaned, and a new bed of hay provided for them at leaſt every week. Being natives of a warm climate, they are naturally chilly in ours: cleanlineſs, therefore, aſſiſts warmth, and expels moiſture. They may be thus reared, without the aid of any artificial heat; but, in general, there is no keep-

ing them from the fire in winter, if they be once permitted to approach it.

When they go to ſleep, they lie flat on their bellies, pretty much in their uſual poſture; except that they love to have their fore feet higher than their hinder. For this purpoſe, they turn themſelves ſeveral times round before they lie down, to find the moſt convenient ſituation. They ſleep, like the hare, with their eyes half open; and continue extremely watchful, if they ſuſpect danger. The male and female are never ſeen both aſleep at the ſame time; but while he enjoys his repoſe, ſhe remains upon the watch, ſilently continuing to guard him, and her head turned towards the place where he lies. When ſhe ſuppoſes that he has had his turn, ſhe then awakes him with a kind of murmuring noiſe, goes to him, forces him from his bed, and lies down in his place. He then performs the ſame good turn for her; and continues watchful till ſhe alſo has done ſleeping.

Theſe animals are exceedingly ſalacious, and generally are capable of coupling at ſix weeks old. The female never goes with young above five weeks; and uſually brings forth from three to five at a time; and this not without pain. But what is very extraordinary, the fe-

male admits the male the very day ſhe has brought forth, and becomes again pregnant; ſo that their multiplication is aſtoniſhing. She ſuckles her young but about twelve or fifteen days; and during that time does not ſeem to know her own; for if the young of any other be brought, though much older, ſhe never drives them away, but ſuffers them even to drain her, to the diſadvantage of her own immediate offspring. They are produced with the eyes open, like all others of the hare kind; and in about twelve hours, equal even to the dam in agility. Although the dam has but two teats, yet ſhe abundantly ſupplies them with milk: and they are alſo capable of feeding upon vegetables, almoſt from the very beginning. If the young ones are permitted to continue together, the ſtronger, as in all other ſocieties, ſoon begins to govern the weak. Their contentions are often long and obſtinate; and their jealouſies very apparent. Their diſputes are uſually for the warmeſt place, or the moſt agreeable food. If one of them happens to be more fortunate in this reſpect than the reſt, the ſtrongeſt generally comes to diſpoſſeſs it of its advantageous ſituation. Their manner of fighting, though terrible to them, is ridiculous enough to a ſpectator. One of them ſeizes the

hair on the nape of the other's neck with its fore teeth, and attempts to tear it away; the other, to retaliate, turns its hinder parts to the enemy, and kicks up behind like an horſe, and with its hinder claws ſcratches the ſides of its adverſary; ſo that ſometimes they cover each other with blood. When they contend in this manner, they gnaſh their teeth pretty loudly; and this is often a denunciation of mutual reſentment.

Theſe, though ſo formidable to each other, yet are the moſt timorous creatures upon earth, with reſpect to the reſt of animated nature: a falling leaf diſturbs them, and every animal overcomes them. From hence they are difficultly tamed; and will ſuffer none to approach them, except the perſon by whom they are fed. Their manner of eating is ſomething like that of the rabbit; and, like it, they appear alſo to chew the cud. Although they ſeldom drink, they make watere very minute. They grunt ſomewhat like a young pig; and have a more piercing note to expreſs pain. In a word, they do no injury; but then, except the pleaſure they afford the ſpectator, they are of very little benefit to mankind. Some, indeed, dreſs and eat them; but their fleſh is indifferent food, and by no means a reward for the trouble of rear-

De Seve del. J. Taylor sculp.

The Guinea Pig.

ing them. This, perhaps, might be improved, by keeping them in a proper warren, and not ſuffering them to become domeſtic: however, the advantages that would reſult from this, would be few, and the trouble great; ſo that it is likely they will continue an uſeleſs, inoffenſive dependant, rather propagated to ſatisfy caprice than ſupply neceſſity.

CHAP. II.

Of Animals of the Rat Kind.

WERE it neceſſary to diſtinguiſh animals of the rat kind from all others, we might deſcribe them as having two large cutting teeth, like the hare kind, in each jaw; as covered with hair; and as not ruminating. Theſe diſtinctions might ſerve to guide us, had we not too near an acquaintance with this noxious race to be miſtaken in their kind. Their numbers, their minuteneſs, their vicinity, their vaſt multiplication, all ſufficiently contribute to preſs them upon our obſervation, and remind us of their exiſtence. Indeed, if we look through the different ranks of animals, from the largeſt to the ſmalleſt, from the great elephant to the diminutive mouſe, we ſhall find that we ſuffer greater injuries from the contemptible meanneſs of the one, than the formidable invaſions of the other. Againſt the elephant, the rhinoceros, or the lion, we can oppoſe united ſtrength; and by art make up the deficiencies of natural power: theſe we have driven into their native ſolitudes, and obliged to continue at a diſtance, in the moſt inconvenient regions and unhealthful climates. But it is otherwiſe

with

with the little teizing race I am now defcribing: no force can be exerted againft their unrefifting timidity; no arts can diminifh their amazing propagation: millions may be at once deftroyed, and yet the breach be repaired in the fpace of a very few weeks; and, in proportion as Nature has denied them force, it has fupplied the defect by their fecundity.

Of thefe, the animal beft known at prefent, and in every refpect the moft mifchievous, is the Great Rat; which, though but a new comer into this country, has taken too fecure a poffeffion to be ever removed. This hateful and rapacious creature, though fometimes called the Rat of Norway, is utterly unknown in all the northern countries, and, by the beft accounts I can learn, comes originally from the Levant. Its firft arrival, as I am affured, was upon the coafts of Ireland, in thofe fhips that traded in provifions to Gibraltar; and perhaps we owe to a fingle pair of thefe animals, the numerous progeny that now infefts the whole extent of the Britifh Empire.

This animal, which is called by Mr. Buffon the Surmalot, is in length about nine inches; its eyes are large and black; the colour of the head, and the whole upper part of the body, is of a light brown, mixed with tawny and afh colour. The

end of the nose, the throat and belly, are of a dirty white, inclining to a grey; the feet and legs are almost bare, and of a dirty pale flesh colour; the tail is as long as the body, covered with minute dusky scales, mixed with a few hairs, and adds to the general deformity of its detestable figure. It is chiefly in the colour that this animal differs from the Black Rat, or the Common Rat, as it was once called; but now common no longer. This new invader, in a very few years after its arrival, found means to destroy almost the whole species, and to possess itself of their retreats.

But it was not against the Black Rat alone that its rapacity was directed; all other animals of inferior strength shared the same misfortunes. The contest with the black rat was of short continuance. As it was unable to contend, and had no holes to fly to for retreat, but where its voracious enemy could pursue, the whole race was soon extinguished. The Frog also was an animal equally incapable of combat or defence. It had been designedly introduced into the kingdom of Ireland some years before the Norway rat; and it was seen to multiply amazingly. The inhabitants were pleased with the propagation of an harmless animal, that served to rid their fields of insects; and even

the prejudices of the people were in its favour, as they ſuppoſed that the frog contributed to render their waters more wholeſome. But the Norway rat ſoon put a ſtop to their encreaſe; as theſe animals were of an amphibious nature, they purſued the frog to its lakes and took it even in its own natural element. I am, therefore, aſſured, that the frog is once more almoſt extinct in that kingdom; and that the Norway rat, having no more enemies left there to deſtroy, is grown leſs numerous alſo.

We are not likely, therefore, to gain by the deſtruction of our old domeſtics, ſince they are replaced by ſuch miſchievous ſucceſſors. The Norway rat has the ſame diſpoſition to injure us, with much greater power of miſchief. It burrows in the bank of rivers, ponds, and ditches; and is every year known to do incredible damage to thoſe mounds that are raiſed to conduct ſtreams, or to prevent rivers from overflowing. In theſe holes, which it forms pretty near the edge of the water, it chiefly reſides during the ſummer, where it lives upon ſmall animals, fiſh, and corn. At the approach of winter, it comes nearer the farm houſes; burrows in their corn, eats much, and damages ſtill more than it conſumes. But nothing that can be eaten, ſeems to eſcape its

voracity. It deſtroys rabbits, poultry, and all kinds of game; and, like the polecat, kills much more than it can carry away. It ſwims with great eaſe, dives with great celerity, and eaſily thins the fiſh pond. In ſhort, ſcarce any of the feebler animals eſcape its rapacity, except the mouſe, which ſhelters itſelf in its little hole, where the Norway rat is too big to follow.

Theſe animals frequently produce from fifteen to thirty at a time*; and uſually bring forth three times a year. This great encreaſe would quickly be found to overrun the whole country, and render our aſſiduity to deſtroy them fruitleſs, were it not happily for us, that they eat and deſtroy each other. The ſame inſatiable appetite that impels them to indiſcriminate carnage, alſo incites the ſtrongeſt to devour the weakeſt, even of their own kind. The large male rat generally keeps in an hole by itſelf, and is as dreaded by own ſpecies, as the moſt formidable enemies. In this manner the number of theſe vermin is kept within due bounds; and when their encreaſe becomes injurious to us, it is repreſſed by their own rapacity.

* Buffon, vol. xvii. p. 2.

But beſide their own enmities among each other, all the ſtronger carnivorous quadrupedes have natural antipathies againſt them. The dog, though he deteſts their fleſh, yet openly declares his alacrity to purſue them; and attacks them with great animoſity. Such as are trained up to killing theſe vermin, diſpatch them often with a ſingle ſqueeze: but thoſe dogs that ſhew any heſitation, are ſure to come off but indifferently; for the rat always takes the advantage of a moment's delay, and, inſtead of waiting for the attack, becomes the aggreſſor, ſeizing its purſuer by the lip, and inflicting a very painful and dangerous wound. From the inflammation, and other angry ſymptoms that attend this animal's bite, ſome have been led to think that it was in ſome meaſure venemous; but it is likely that the difficulty of the wound's healing, ariſes merely from its being deep and lacerated by the teeth, and is rather a conſequence of the figure of the inſtruments that inflict it, than any venom they may be ſuppoſed to poſſeſs.

The cat is another formidable enemy of this kind; and yet the generality of our cats neither care to attack it, nor to feed upon it when killed. The cat is a more prudent hunter than the dog, and will not be at the pains to take

or combat with an enemy that is not likely to repay her time and danger. Some cats, however, will purſue and take the rat; though often not without an obſtinate reſiſtance. If hungry alſo, the cat will ſometimes eat the head; but in general, ſhe is merely content with her victory.

A foe much more dangerous to theſe vermin is the weaſel. This animal purſues them with avidity; and being pretty nearly of their own ſize, follows them into their holes, where a deſperate combat enſues. The ſtrength of each is pretty near equal; but the arms are very different. The rat, furniſhed with four long tuſks at the extremity of its jaw, rather ſnaps than bites; but the weaſel, where it once faſtens, holds, and continuing alſo to ſuck the blood at the ſame time, weakens its antagoniſt, and always obtains the victory. Mankind have contrived ſeveral other methods of deſtroying theſe noxious intruders; ferrets, traps, and particularly poiſon: but of all other poiſons, I am told that the nux vomica, ground and mixed with meal, is the moſt certain, as it is the leaſt dangerous.

To this ſpecies I will ſubjoin as a variety, the Black Rat, mentioned above, greatly reſembling the former in figure, but very diſtinct in

nature, as appears from their mutual antipathy. This animal was formerly as miſchievous as it was common; but at preſent it is almoſt utterly extirpated by the great rat, one malady often expelling another. It is become ſo ſcarce, that I do not remember ever to have ſeen one. It is ſaid to be poſſeſſed of all the voracious and unnatural appetites of the former; though, as it is leſs, they may probably be leſs noxious. Its length is about ſeven inches; and the tail is near eight inches long. The colour of the body is of a deep iron grey, bordering upon black, except the belly, which is of a dirty cinereous hue. They have propagated in America in great numbers, being originally introduced from Europe; and as they ſeem to keep their ground wherever they get footing, they are now become the moſt noxious animals in that part of the world.

To this alſo we may ſubjoin the Black Water Rat, about the ſame ſize with the latter, with a larger head, a blunter noſe, leſs eyes, and ſhorter ears, and the tip of its tail a little white. It was ſuppoſed by Ray to be web-footed; but this has been found to be a miſtake, its toes pretty much reſembling thoſe of its kind. It never frequents houſes; but is uſually found on the banks of rivers, ditches, and ponds, where

it burrows and breeds. It feeds on fiſh, frogs, and inſects; and in ſome countries it is eat on faſting days.

THE MOUSE.

AN animal equally miſchievous, and equally well known with the former, is the Mouſe. Timid, cautious, and active, all its diſpoſitions are ſimilar to thoſe of the rat, except with fewer powers of doing miſchief*. Fearful by nature, but familiar from neceſſity, it attends upon mankind, and comes an unbidden gueſt to his moſt delicate entertainments. Fear and neceſſity ſeem to regulate all its motions; it never leaves its hole but to ſeek proviſion, and ſeldom ventures above a few paces from home. Different from the rat, it does not go from one houſe to another, unleſs it be forced; and, as it is more eaſily ſatisfied, it does much leſs miſchief.

Almoſt all animals are tamed more difficultly in proportion to the cowardice of their natures. The truly bold and courageous eaſily become familiar, but thoſe that are always fearful are ever ſuſpicious. The mouſe being the moſt feeble, and conſequently the moſt timid of all quadrupedes, except the guinea-pig, is never

* Buffon, vol. xv. p. 145.

rendered thoroughly familiar; and, even though fed in a cage, retains its natural apprehenſions. In fact, it is to theſe alone that it owes its ſecurity *. No animal has more enemies, and few ſo incapable of reſiſtance. The owl, the cat, the ſnake, the hawk, the weaſel, and the rat itſelf, deſtroy this ſpecies by millions, and it only ſubſiſts by its amazing fecundity.

The mouſe brings forth at all ſeaſons, and ſeveral times in the year. Its uſual number is from ſix to ten. Theſe in leſs than a fortnight are ſtrong enough to run about and ſhift for themſelves. They are chiefly found in farmers yards and among their corn, but are ſeldom in thoſe ricks that are much infeſted with rats. They generally chuſe the ſouth-weſt ſide of the rick, from whence moſt rain is expected; and from thence they often, of an evening, venture forth to drink the little drops either of rain or dew that hang at the extremities of the ſtraw †. Ariſtotle gives us an idea of their prodigious fecundity, by aſſuring us that, having put a mouſe with young into a veſſel of corn, in ſome time after he found an hundred and twenty mice, all ſprung from one original. The early growth of this animal implies alſo the ſhort du-

* E volucribus hirundines ſunt indociles, e terreſtibus mures. Plin.

† Buffon, vol. xv. p. 147.

ration of its life, which ſeldom laſts above two or three years. This ſpecies is very much diffuſed, being found in almoſt all parts of the ancient continent, and having been exported to the new *. They are animals that, while they fear human ſociety, cloſely attend it; and, although enemies to man, are never found but near thoſe places where he has fixed his habitation. Numberleſs ways have been found for deſtroying them; and Geſner has minutely deſcribed the variety of traps by which they are taken. Our Society for the Encouragement of Arts and Manufactures propoſed a reward for the moſt ingenious contrivance for that purpoſe; and I obſerved almoſt every candidate paſſing off deſcriptions as inventions of his own. I thought it was cruel to detect the plagiariſm, or fruſtrate the humble ambition of thoſe who would be thought the inventors of a mouſe-trap.

To this ſpecies, merely to avoid teizing the reader with a minute deſcription of animals very inconſiderable and very nearly alike, I will add that of the *long-tailed field-mouſe*, which is larger than the former, of a colour very nearly reſembling the Norway rat, and chiefly found in fields and gardens. They are extremely voracious, and hurtful in gardens and young nur-

* Liſle's Huſbandry, vol. ii. p. 391.

ſeries, where they are killed in great numbers. However, their fecundity quickly repairs the deſtruction.

Nearly reſembling the former, but larger, (for it is ſix inches long) is the *ſhort-tailed field-mouſe*; which, as its name implies, has the tail much ſhorter than the former, it being not above an inch and an half long, and ending in a ſmall tuft. Its colour is more inclining to that of the domeſtic mouſe, the upper part being blackiſh and the under of an aſh colour. This, as well as the former, are remarkable for laying up proviſion againſt winter; and Mr. Buffon aſſures us they ſometimes have a ſtore of above a buſhel at a time.

We may add alſo the *ſhrew-mouſe* to this ſpecies of minute animals, being about the ſize of the domeſtic mouſe, but differing greatly from it in the form of its noſe, which is very long and ſlender. The teeth alſo are of a very ſingular form, and twenty-eight in number; whereas the common number in the rat kind is uſually not above ſixteen. The two upper fore-teeth are very ſharp, and on each ſide of them there is a kind of wing or beard, like that of an arrow, ſcarce viſible but on a cloſe inſpection. The other teeth are placed cloſe together, being very ſmall, and ſeeming ſcarce

ſeparated; ſo that with reſpect to this part of its formation, the animal has ſome reſemblance to the viper. However, it is a very harmleſs little creature, doing ſcarce any injury. On the contrary, as it lives chiefly in the fields, and feeds more upon inſects than corn, it may be conſidered rather as a friend than an enemy. It has a ſtrong diſagreeable ſmell, ſo that the cat, when it is killed, will refuſe to eat it. It is ſaid to bring four or five young at a time.

THE DORMOUSE.

THESE animals may be diſtinguiſhed into three kinds; the *greater dormouſe*, which Mr. Buffon calls the Loir; the *middle*, which he calls the Lerot; the *leſs*, which he denominates the Muſcardin. They differ from each other in ſize, the largeſt being equal to a rat, the leaſt being no bigger than a mouſe. They all differ from the rat in having the tail tufted with hair, in the manner of a ſquirrel, except that the ſquirrel's tail is flat, reſembling a fan; and theirs round, reſembling a bruſh. The lerot differs from the loir by having two black ſpots near the eyes; the muſcardin differs from both in the whitiſh colour of its hair on

the back. They all three agree in having black ſparkling eyes, and the whiſkers partly white and partly black. They agree in their being ſtupefied like the marmout during the winter, and in their hoarding up proviſions to ſerve them in caſe of a temporary revival.

They inhabit woods or very thick hedges, forming their neſts in the hollow of ſome tree, or near the bottom of a cloſe ſhrub, humbly content with continuing at the bottom, and never aſpiring to ſport among the branches. Towards the approach of the cold ſeaſon they form a little magazine of nuts, beans, or acorns; and, having laid in their hoard, ſhut themſelves up with it for the winter. As ſoon as they feel the firſt advances of the cold they prepare to leſſen its effect, by rolling themſelves up in a ball, and thus expoſing the ſmalleſt ſurface to the weather. But it often happens that the warmth of a ſunny day, or an accidental change from cold to heat, thaws their nearly ſtagnant fluids, and they revive. On ſuch occaſions they have their proviſions laid, in, and they have not far to ſeek for their ſupport. In this manner they continue uſually aſleep, but ſome times waking, for above five months in the year, ſeldom venturing from their retreats, and conſequently but rarely ſeen. Their neſts are

lined with moſs graſs and dead leaves; they uſually bring forth three or four young at a time, and that but once a year, in the ſpring.

THE MUSK RAT.

OF theſe animals of the rat kind, but with a muſky ſmell, there are alſo three diſtinctions, as of the former; the Ondatra, the Deſman, and the Pilori. The Ondatra is a native of Canada, the Deſman of Lapland, and the Pilori of the Weſt-India iſlands. The ondatra differs from all others of its kind, in having the tail flatted and carried edge-ways. The deſman has a long extended ſnout like the ſhrew-mouſe; and the pilori a ſhort tail, as thick at one end as the other. They all reſemble each other in being fond of the water, but particularly in that muſky odour from whence they have taken their name.

Of theſe, the ondatra is the moſt remarkable, and has been the moſt minutely deſcribed *. This animal is about the ſize of a ſmall rabbit, but has the hair, the colour, and the tail of a rat, except that it is flatted on the ſides, as mentioned above. But it is ſtill more extraordinary upon other accounts, and different from all other animals whatever. It is ſo formed that it can

* Buffon, vol. xx. p. 4.

contract and enlarge its body at pleaſure. It has a muſcle like that of horſes, by which they move their hides, lying immediately under the ſkin, and that furniſhed with ſuch a power of contraction, together with ſuch an elaſticity in the falſe ribs, that this animal can creep into an hole where others, ſeemingly much leſs, cannot follow. The female is remarkable alſo for two diſtinct apertures, one for urine, the other for propagation. The male is equally obſervable for a peculiarity of conformation; the muſky ſmell is much ſtronger at one particular ſeaſon of the year than any other; and the marks of the ſex ſeem to appear and diſappear in the ſame manner.

The ondatra in ſome meaſure reſembles the beaver in its nature and diſpoſition. They both live in ſociety during winter; they both form houſes of two feet and an half wide, in which they reſide ſeveral families together. In theſe they do not aſſemble to ſleep as the marmout, but purely to ſhelter themſelves from the rigour of the ſeaſon. However, they do not lay up magazines of proviſion like the beaver; they only form a kind of covert way to and round their dwelling, from whence they iſſue to procure water and roots, upon which they ſubſiſt. During winter their houſes are covered under a depth of eight

or ten feet of ſnow; ſo that they muſt lead but a cold, gloomy and a neceſſitous life, during its continuance. During ſummer they ſeparate two by two, and feed upon the variety of roots and vegetables that the ſeaſon offers. They then become extremely fat, and are much ſought after, as well for their fleſh as their ſkins, which are very valuable. They then alſo acquire a very ſtrong ſcent of muſk, ſo pleaſing to an European, but which the ſavages of Canada cannot abide. What we admire as a perfume they conſider as a moſt abominable ſtench, and call one of their rivers, on the banks of which this animal is ſeen to burrow in numbers, by the name of the ſtinking river, as well as the rat itſelf, which is denominated by them the ſtinkard. This is a ſtrange diverſity among mankind; and, perhaps, may be aſcribed to the different kinds of food among different nations. Such as chiefly feed upon rancid oils and putrid fleſh will often miſtake the nature of ſcents; and, having been long uſed to ill ſmells, will by habit conſider them as perfumes. Be this as it will, although theſe nations of northern ſavages conſider the muſk rat as intolerably fœtid, they nevertheleſs regard it as very good eating; and, indeed, in this they imitate the epicures of Europe very exactly, whoſe taſte ſeldom reliſhes a diſh till the

the noſe gives the ſtrongeſt marks of diſapprobation. As to the reſt, this animal a good deal reſembles the beaver in its habits and diſpoſition; but, as its inſtincts are leſs powerful, and its oeconomy leſs exact, I will reſerve for the deſcription of that animal a part of what may be applicable to this.

THE CRICETUS.

THE Cricetus, or German Rat, which Mr. Buffon calls the Hamſter, greatly reſembles the water-rat in its ſize, ſmall eyes, and the ſhortneſs of its tail. It differs in colour, being rather browner, like the Norway rat, with the belly and legs of a dirty yellow. But the marks by which it may be diſtinguiſhed from all others are two pouches, like thoſe of a baboon, on each ſide of its jaw, under the ſkin, into which it can cram a large quantity of proviſion. Theſe bags are oblong, and of the ſize, when filled, of a large walnut. They open into the mouth, and fall back along the neck to the ſhoulder. Into theſe the animal can thruſt the ſurplus of thoſe fruits or grains it gathers in the fields, ſuch as wheat, peas, or acorns. When the immediate calls of hunger are ſatisfied, it then falls to filling theſe; and thus, loaded with two great bunches on each ſide of the jaw, it

returns home to its hole to deposit the spoil as a store for the winter. The size, the fecundity, and the voraciousness of this animal render it one of the greatest pests in the countries where it is found, and every method is made use of to destroy it.

But, although this animal is very noxious with respect to man, yet, considered with regard to those instincts which conduce to its own support and convenience, it deserves our admiration *. Its hole offers a very curious object for contemplation, and shews a degree of skill superior to the rest of the rat kind. It consists of a variety of apartments fitted up for the different occasions of the little inhabitant. It is generally made on an inclining ground, and always has two entrances, one perpendicular and the other oblique; though, if there be more than one in a family, there are as many perpendicular holes as there are individuals below. The perpendicular hole is usually that through which they go in and out: the oblique serves to give a thorough air to keep the retreat clean, and, in case one hole is stopped, to give an exit at this. Within about a foot of the perpendicular hole the animal makes two more, where are deposited the family's provisions. These are

* Buffon, vol. xxvi. p. 159.

much more ſpacious than the former, and are large in proportion to the quantity of the ſtore. Beſide theſe, there is ſtill another apartment warmly lined with graſs and ſtraw, where the female brings forth her young; all theſe communicate with each other, and all together take up a ſpace of ten or twelve feet in diameter. Theſe animals furniſh their ſtorehouſes with dry corn well cleaned; they alſo lay in corn in the ear, and beans and peas in the pod. Theſe, when occaſion requires, they afterwards ſeparate, carrying out the pods and empty ears by their oblique paſſage. They uſually begin to lay in at the latter end of Auguſt; and, as each magazine is filled, they carefully cover up the mouth with earth, and that ſo neatly that it is no eaſy matter to diſcover where the earth has been removed. The only means of finding out their retreats are, therefore, to obſerve the oblique entrance, which generally has a ſmall quantity of earth before it; and this, though often ſeveral yards from their perpendicular retreat, leads thoſe who are ſkilled in the ſearch to make the diſcovery. Many German peaſants are known to make a livelihood by finding out and bringing off their hoards, which, in a fruitful ſeaſon, often furniſh two buſhels of good grain in each apartment.

Like most others of the rat kind, they produce twice or thrice a year, and bring five or six at a time. Some years they appear in alarming numbers, at other times they are not so plenty. The moist seasons assist their propagation; and it often happens on such years that their devastations produce a famine all over the country. Happily, however, for mankind, these, like the rest of their kind, destroy each other; and of two that Mr. Buffon kept in a cage, male and female, the latter killed and devoured the former. As to the rest, their fur is considered as very valuable; the natives are invited by rewards to destroy them; and the weasel kind seconds the wishes of government with great success. Although they are usually found brown on the back and white on the belly, yet many of them are observed to be grey, which may probably arise from the difference of age.

THE LEMING.

HAVING considered various kinds of these noxious little animals that elude the indignation of mankind, and subsist by their number, not their strength, we come to a species more bold, more dangerous, and more numerous than any of the former. The Leming, which is a native

of Scandinavia, is often ſeen to pour down in myriads from the northern mountains, and, like a peſtilence, deſtroy all the productions of the earth. It is deſcribed as being larger than a dormouſe, with a buſhy tail, though ſhorter. It is covered with thin hair of various colours. The extremity of the upper part of the head is black, as are likewiſe the neck and ſhoulders, but the reſt of the body is reddiſh, intermixed with ſmall black ſpots of various figures, as far as the tail, which is not above half an inch long. The eyes are little and black, the ears round and inclining towards the back, the legs before are ſhort, and thoſe behind longer, which gives it a great degree of ſwiftneſs. But what it is much more remarkable for than its figure are, its amazing fecundity and extraordinary migrations.

In wet ſeaſons, all of the rat kind are known to propagate more than in dry; but this ſpecies in particular is ſo aſſiſted in multiplying by the moiſture of the weather, that the inhabitants of Lapland ſincerely believe that they drop from the clouds, and that the ſame magazines that furniſh hail and ſnow pour the leming alſo upon them. In fact, after long rain, theſe animals ſet forward from their native mountains, and ſeveral millions in a troop deluge the whole

plain with their numbers *. They move, for the moſt part, in a ſquare, marching forward by night and lying ſtill by day. Thus, like an animated torrent, they are often ſeen more than a mile broad covering the ground, and that ſo thick that the hindmoſt touches its leader. It is in vain that the poor inhabitant reſiſts or attempts to ſtop their progreſs, they ſtill keep moving forward; and, though thouſands are deſtroyed, myriads are ſeen to ſucceed and make their deſtruction impracticable. They generally move in lines, which are about three feet from each other and exactly parallel. Their march is always directed from the north-weſt to the ſouth-eaſt, and regularly conducted from the beginning. Wherever their motions are turned nothing can ſtop them; they go directly forward, impelled by ſome ſtrange power; and, from the time they firſt ſet out, they never once think of retreating. If a lake or a river happens to interrupt their progreſs, they all together take the water and ſwim over it; a fire, a deep well, or a torrent, does not turn them out of their ſtraight-lined direction; they boldly plunge into the flames, or leap down the well, and are ſometimes ſeen climbing up on the other ſide. If they are interrupted by a boat acroſs a river

* Phil. Tranſ. vol. ii. p. 872.

while they are ſwimming, they never attempt to ſwim round it, but mount directly up its ſides; and the boat-men, who know how vain reſiſtance in ſuch a caſe would be, calmly ſuffer the living torrent to paſs over, which it does without further damage. If they meet with a ſtack of hay or corn that interrupts their paſſage, inſtead of going over it they gnaw their way through; if they are ſtopped by a houſe in their courſe, if they cannot get through it, they continue there till they die. It is happy, however, for mankind that they eat nothing that is prepared for human ſubſiſtence; they never enter an houſe to deſtroy the proviſions, but are contented with eating every root and vegetable that they meet. If they happen to paſs through a meadow, they deſtroy it in a very ſhort time, and give it an appearance of being burnt up and ſtrewed with aſhes. If they are interrupted in their courſe, and a man ſhould imprudently venture to attack one of them, the little animal is no way intimidated by the diſparity of ſtrength, but furiouſly flies up at its opponent, and, barking ſomewhat like a puppy, wherever it faſtens does not eaſily quit the hold. If at laſt the leader be forced out of its line, which it defends as long as it can, and be ſeparated from the reſt of its kind, it ſets up a plaintive

cry different from that of anger, and, as ſome pretend to ſay, gives itſelf a voluntary death, by hanging itſelf on the fork of a tree.

An enemy ſo numerous and deſtructive would quickly render the countries where they appear utterly uninhabitable, did it not fortunately happen that the ſame rapacity that animates them to deſtroy the labours of mankind, at laſt impels them to deſtroy and devour each other *. After committing incredible devaſtations, they are at laſt ſeen to ſeparate into two armies, oppoſed with deadly hatred, along the coaſts of the larger lakes and rivers. The Laplanders, who obſerve them thus drawn up to fight, inſtead of conſidering their mutual animoſities as an happy riddance of the moſt dreadful peſt, form ominous prognoſtics from the manner of their arrangement. They conſider their combats as a preſage of war, and expect an invaſion from the Ruſſians or the Swedes, as the ſides next thoſe kingdoms happen to conquer. The two diviſions, however, continue their engagements and animoſity until one party overcomes the other. From that time they utterly diſappear, nor is it well known what becomes of either the conquerors or the conquered. Some ſuppoſe that they ruſh headlong into the ſea, others that

* Dictionnaire Raiſonnée, vol. ii. p. 610.

they kill themſelves, as ſome are found hanging on the forked branches of a tree, and others ſtill that they are deſtroyed by the young ſpring herbage. But the moſt probable opinion is, that, having devoured the vegetable productions of the country, and having nothing more to ſubſiſt on, they then fall to devouring each other; and, having habituated themſelves to that kind of food, continue it. However this be they are often found dead by thouſands, and their carcaſes have been known to infect the air for ſeveral miles round, ſo as to produce very malignant diſorders. They ſeem alſo to infect the plants they have gnawed, for the cattle often die that afterward feed in the places where they paſſed.

As to the reſt, the male is larger and more beautifully ſpotted than the female. They are extremely prolific; and what is extraordinary, their breeding does not hinder their march; for ſome of them have been obſerved to carry one young one in their mouth and another on their back. They are greatly preyed upon by the ermine, and, as we are told eveu by the reindeer. The Swedes and Norwegians, who live by huſbandry, conſider an invaſion from theſe vermin as a terrible viſitation; but it is very different with reſpect to the Laplanders, who

lead a vagrant life, and who, like the lemings themſelves, if their proviſions be deſtroyed in one part of the country, can eaſily retire to another. Theſe are never ſo happy as when an army of lemings come down amongſt them; for then they feaſt upon their fleſh; which though horrid food, and which, though even dogs and cats are known to deteſt, theſe little ſavages eſteem very good eating, and devour greedily. They are glad of their arrival alſo upon another account, for they always expect a great plenty of game the year following, among thoſe fields which the lemings have deſtroyed.

THE MOLE.

TO theſe minute animals of the rat kind, a great part of whoſe lives is paſt in holes under ground, I will ſubjoin one little animal more, no way reſembling the rat, except that its whole life is ſpent there. As we have ſeen ſome quadrupedes formed to crop the ſurface of the fields, and others to live upon the tops of trees, ſo the Mole is formed to live wholly under the earth, as if Nature meant that no place ſhould be left wholly untenanted. Were we from our own ſenſations to pronounce upon the life of a quadrupede that was never to appear above ground, but always condemned to

hunt for its prey underneath, obliged, whenever it removed from one place to another, to bore its way through a resisting body, we should be apt to assert that such an existence must be the most frightful and solitary in nature. However, in the present animal, though we find it condemned to all those seeming inconveniencies, we shall discover no signs of wretchedness or distress. No quadrupede is fatter, none has a more sleek or glossy skin; and, though denied many advantages that most animals enjoy, it is more liberally possessed of others, which they have in a more scanty proportion.

This animal, so well known in England, is, however, utterly a stranger in other places, and particularly in Ireland. For such, therefore, as have never seen it, a short description will be necessary. And, in the first place, though somewhat of a size between the rat and the mouse, it no way resembles either, being an animal entirely of a singular kind, and perfectly unlike any other quadrupede whatever. It is bigger than a mouse, with a coat of fine, short, glossy, black hair. Its nose is long and pointed, resembling that of an hog, but much longer, Its eyes are so small that it is scarce possible to discern them. Instead of ears it has only holes in the place. Its neck is so short that the head

ſeems ſtuck upon the ſhoulders. The body is thick and round, terminating by a very ſmall ſhort tail, and its legs alſo are ſo very ſhort that the animal ſeems to lie flat on its belly. From under its belly, as it reſts in this poſition, the four feet appear juſt as if they immediately grew out of the body. Thus the animal appears to us at firſt view as a maſs of fleſh covered with a fine ſhining black ſkin, with a little head, and ſcarce any legs, eyes, or tail. On a cloſer inſpection, however, two little black points may be diſcerned, that are its eyes. The ancients, and ſome of the moderns, were of opinion that the animal was utterly blind; but Derham, by the help of a microſcope, plainly diſcovered all the parts of the eye that are known in other animals, ſuch as the pupil, the vitreous and the cryſtaline humours. The fore-legs appear very ſhort and ſtrong, and furniſhed with five claws to each. Theſe are turned outwards and backwards, as the hands of a man when ſwimming. The hind legs are longer and weaker than the fore, being only uſed to aſſiſt its motions; whereas the others are continually employed in digging. The teeth are like thoſe of a ſhrew-mouſe, and there are five on both ſides of the upper jaw, which ſtand out; but thoſe behind are divided into points. The tongue is as large as the mouth will hold.

Such is the extraordinary figure and formation of this animal; which, if we compare with its manner of living, we ſhall find a manifeſt attention in Nature to adapt the one to the other *. As it is allotted a ſubterraneous abode, the ſeeming defects of its formation vaniſh, or rather are turned to its advantage. The breadth, ſtrength, and ſhortneſs of the fore feet, which are inclined outwards, anſwer the purpoſes of digging, ſerving to throw back the earth with greater eaſe, and to purſue the worms and inſects which are its prey: had they been longer, the falling in of the earth would have prevented the quick repetition of its ſtrokes in working; or have obliged it to make a larger hole, in order to give room for their exertion. The form of the body is not leſs admirably contrived for its way of life. The fore part is thick and very muſcular, giving great ſtrength to the action of the fore feet, enabling it to dig its way with amazing force and rapidity, either to purſue its prey, or elude the ſearch of the moſt active enemy. By its power of boring the earth, it quickly gets below the ſurface; and I have ſeen, it, when let looſe in the midſt of a field, like the ghoſt on a theatre, inſtantly ſink into the earth; and the

* Britiſh Zoology.

moſt active labourer, with a ſpade, in vain attempted to purſue.

The ſmallneſs of it eyes, which induced the ancients to think it was blind, is, to this animal, a peculiar advantage. A ſmall degree of viſion is ſufficient for a creature that is ever deſtined to live in darkneſs. A more extenſive ſight would only have ſerved to ſhew the horrors of its priſon, while Nature had denied it the means of an eſcape. Had this organ been larger, it would have been perpetually liable to injuries, by the falling of the earth into it; but Nature, to prevent that inconvenience, has not only made them very ſmall, but very cloſely covered them with hair. Anatomiſts mention, beſide theſe advantages, another, that contributes to their ſecurity; namely, a certain muſcle; by which the animal can draw back the eye whenever it is neceſſary or in danger.

As the eye is thus perfectly fitted to the animal's ſituation, ſo alſo are the ſenſes of hearing and ſmelling. The firſt gives it notice of the moſt diſtant appearance of danger; the other directs it, in the midſt of darkneſs, to its food. The wants of a ſubterraneous animal can be but few; and theſe are ſufficient to ſupply them: to eat, and to produce its kind, are the whole employment of ſuch a life; and for

both theſe purpoſes it is wonderfully adapted by Nature *.

Thus admirably is this animal fitted for a life of darkneſs and ſolitude; with no appetites but what it can eaſily indulge, with no enemies but what it can eaſily evade or conquer. As ſoon as it has once buried itſelf in the earth, it ſeldom ſtirs out, unleſs forced by violent rains in ſummer, or when in purſuit of its prey, it happens to come too near the ſurface, and thus gets into the open air, which may be conſidered as its unnatural element. In general, it chuſes the looſer ſofter grounds, beneath which it can travel with greater eaſe; in ſuch alſo it generally finds the greateſt number of worms and inſects, upon which it chiefly preys. It is obſerved to be moſt active, and to caſt up moſt earth, immediately before rain; and, in winter, before

* Teſtes habet maximos, paraſtatas ampliſſimas, novum corpus ſeminale ab his diverſum ac ſeparatum. Penem etiam facile omnium, ni fallor, animalium longiſſimum, ex quibus colligere eſt maximam præ reliquis omnibus animalibus voluptatem in coitu, hoc abjectum et vile animalculum percipere, ut habeant quod ipſi invideant qui in hoc ſupremas vitæ ſuæ delicias collocant: Ray's Synopſ. Quadrup. p. 239. Huic opinioni aſſentitur D. Buffon, attamen non mihi apparet magnitudinem partium talem voluptatem augere. Maribus enim ſalaciſſimis contrarium obtinet.

a thaw: at thofe times the worms and infects begin to be in motion; and approach the furface, whither this induftrious animal purfues them. On the contrary, in very dry weather, the mole feldom or never forms any hillocks; for then it is obliged to penetrate deeper after its prey, which at fuch feafons retire far into the ground.

As the moles very feldom come above ground *, they have but few enemies; and very readily evade the purfuit of animals ftronger and fwifter than themfelves. Their greateft calamity is an inundation; which, wherever it happens, they are feen, in numbers, attempting to fave themfelves by fwimming, and ufing every effort to reach the higher grounds. The greateft part, however, perifh, as well as their young, which remain in the holes behind. Were it not for fuch accidents, from their great fecundity, they would become extremely troublefome; and as it is, in fome places, they are confidered by the farmer as his greateft peft. They couple towards the approach of fpring; and their young are found about the beginning of May. They generally have four or five at a time; and it is eafy to diftinguifh among other mole-hills, that in which the female has

* Buffon.

brought

De Seve del. Js. Taylor sculp.

The Mole.

brought forth her young. Theſe are made with much greater art than the reſt; and are uſually large. The female, in order to form this retreat, begins by erecting the earth into a tolerably ſpacious apartment, which is ſupported within by partitions, at proper diſtances, that prevent the roof from falling. All round this ſhe works, and beats the earth very firm, ſo as to make it capable of keeping out the rain let it be never ſo violent. As the hillock in which this apartment is thus formed, is raiſed above ground, the apartment itſelf is conſequently above the level of the plain, and therefore leſs ſubject to accidental ſlight inundations. The place being thus fitted, ſhe then procures graſs and dry leaves, as a bed for her young. There they lie ſecure from wet, and ſhe continues to make their retreat equally ſo from danger; for all round this hill of her own raiſing, are holes running into the earth, that part from the middle apartment, like rays from a center, and extend about fifteen feet in every direction: theſe reſemble ſo many walks or chaces, into which the animal makes her ſubterraneous excurſions, and ſupplies her young with ſuch roots or inſects as ſhe can provide: but they contribute ſtill more to the general

ſafety; for as the mole is very quick of hearing, the inſtant ſhe perceives her little habitation attacked, ſhe takes to her burrow, and unleſs the earth be dug away by ſeveral men at once, ſhe and her young always make a good retreat.

The mole is ſcarcely found, except in cultivated countries: the varieties are but few. That which is found in Virginia, reſembles the common mole, except in colour, which is black, mixed with a deep purple. There are ſometimes white moles, ſeen particularly in Poland, rather larger than the former. As their ſkin is ſo very ſoft and beautiful, it is odd that it has not been turned to any advantage. Agricola tells us, that he ſaw hats made from it, the fineſt and the moſt beautiful that could be imagined.

CHAP.

CHAP. III.

Of Animals of the Hedge-hog, or prickly Kind.

ANIMALS of the Hedge-hog kind require but very little accuracy to diſtinguiſh them from all others. That hair which ſerves the generality of quadrupedes for warmth and ornament, is partly wanting in theſe; while its place is ſupplied by ſharp ſpines or prickles, that ſerve for their defence. This general characteriſtic, therefore, makes a much more obvious diſtinction than any that can be taken from their teeth or their claws. Nature, by this extraordinary peculiarity, ſeems to have ſeparated them in a very diſtinguiſhed manner; ſo that inſtead of claſſing the hedge-hog among the moles, or the porcupine with the hare, as ſome have done, it is much more natural and obvious to place them, and others approaching them in this ſtrange peculiarity, in a claſs by themſelves: nor let it be ſuppoſed, that while I thus alter their arrangement, and ſeparate them from animals with which they have been formerly combined, that I am deſtroying any ſecret affinities that exiſt in nature. It is natural, indeed, for readers to ſuppoſe, when they ſee two

ſuch oppoſite animals as the hare and the porcupine aſſembled together in the ſame group, that there muſt be ſome material reaſon, ſome ſecret connexion, for thus joining animals ſo little reſembling each other in appearance. But the reaſons for this union were very ſlight, and merely aroſe from a ſimilitude in the fore-teeth: no likeneſs in the internal conformation; no ſimilitude in nature, in habitudes, or diſpoſition; in ſhort, nothing to faſten the link that combines them, but the ſimilitude in the teeth: this, therefore, may be eaſily diſpenſed with; and, as was ſaid, it will be moſt proper to claſs them according to their moſt ſtriking ſimilitudes.

The Hedge-hog, with an appearance the moſt formidable, is yet one of the moſt harmleſs animals in the world: unable or unwilling to offend, all its precautions are only directed to its own ſecurity; and it is armed with a thouſand points, to keep off the enemy, but not to invade him. While other creatures truſt to their force, their cunning, or their ſwiftneſs, this animal, deſtitute of all, has but one expedient for ſafety; and from this alone it often finds protection. As ſoon as it perceives itſelf attacked, it withdraws all its vulnerable parts, rolls itſelf into a ball, and preſents nothing but its defenſive thorns to the enemy; thus, while

it attempts to injure no other quadrupede, they are equally incapable of injuring it: like those knights, we have somewhere read of, who were armed in such a manner, that they could neither conquer others, nor be themselves overcome.

This animal is of two kinds; one with a nose like the snout of a hog; the other, more short and blunt, like that of a dog. That with the muzzle of a dog is the most common, being about six inches in length, from the tip of the nose to the insertion of the tail. The tail is little more than an inch long; and so concealed by the spines, as to be scarce visible: the head, back, and sides, are covered with prickles; the nose, breast, and belly, are covered with fine soft hair *; the legs are short, of a dusky colour, and almost bare; the toes on each foot are five in number, long and separated; the prickles are about an inch in length, and very sharp-pointed; their lower part is white, the middle black, and the points white: the eyes are small, and placed high in the head; the ears are round, pretty large, and naked; the mouth is small, but well furnished with teeth; these, however, it only uses in chewing its food,

* Præputium propendens. Linnæi Syst. 75. And of the female he might have said, resupina copulatur.

but neither in attacking or defending itſelf againſt other animals. Its only reliance in caſes of danger, is on its ſpines the inſtant it perceives an enemy, it puts itſelf into a poſture of defence, and keeps upon its guard until it ſuppoſes the danger over. On ſuch occaſions, it immediately alters its whole appearance: from its uſual form, ſomewhat reſembling a ſmall animal, with a bunch on its back, the animal begins to bend its back, to lay its head upon its breaſt, to ſhut its eyes, to roll down the ſkin of its ſides towards the legs, to draw theſe up, and, laſtly, to tuck them in on every ſide, by drawing the ſkin ſtill cloſer. In this form, which the hedge-hog always puts on when diſturbed, it no way reſembles an animal, but rather a roundiſh maſs of prickles, impervious on every ſide. The ſhape of the animal thus rolled up, ſomewhat reſembles a cheſtnut in the huſk; there being, on one ſide, a kind of flat ſpace, which is that on which the head and legs have been tucked in.

Such is the uſual appearance of the hedge-hog, upon the approach of any danger. Thus rolled up in a lump, it patiently waits till its enemy paſſes by, or is fatigued with fruitleſs attempts to annoy it. The cat, the weaſel, the ferret, and the martin, quickly decline the combat; and the dog himſelf generally ſpends

his time in empty menaces rather than in effectual efforts. Every encreaſe of danger only encreaſes the animal's precautions to keep on its guard; its aſſailant vainly attempts to bite, ſince he thus more frequently feels than inflicts a wound; he ſtands enraged and barking, and rolls it along with his paws; ſtill, however, the hedge-hog patiently ſubmits to every indignity, but continues ſecure; and ſtill more to diſguſt its enemy with the conteſt, ſheds its urine, the ſmell of which is alone ſufficient to ſend him away. In this manner the dog, after barking for ſome time, leaves the hedge-hog where he found him; who perceiving the danger paſt, at length peeps out from its ball, and, if not interrupted, creeps ſlowly to its retreat.

The hedge-hog, like moſt other wild animals, ſleeps by day, and ventures out by night. It generally reſides in ſmall thickets, in hedges, or in ditches covered with buſhes; there it makes a hole of about ſix or eight inches deep, and lies well wrapped up, in moſs, graſs, or leaves. Its food is roots, fruits, worms, and inſects. It is alſo ſaid to ſuck cattle, and hurt their udders; but the ſmallneſs of its mouth will ſerve to clear it from this reproach. It is ſaid alſo to be very hurtful in gardens and orchards, where it will roll itſelf in

an heap of fruit, and ſo carry a large quantity away upon its prickles; but this imputation is as ill grounded as the former, ſince the ſpines are ſo diſpoſed, that no fruit will ſtick upon them, even if we ſhould try to fix them on. It rather appears to be a very ſerviceable animal, in ridding our fields of inſects and worms, which are ſo prejudicial to vegetation.

Mr. Buffon, who kept theſe animals tame about his houſe, acquits them of the reproach of being miſchievous in the garden; but then he accuſes them of tricks, of which from the form and habits of this animal one would be never led to ſuſpect them. "I have often," ſays he, "had the female and her young brought me about the beginning of June: they are generally from three to five in number: they are white in the beginning, and only the marks of their ſpines appear: I was willing to rear ſome of them, and accordingly put the dam and her young into a tub, with abundant proviſion beſide them; but the old animal, inſtead of ſuckling her young, devoured them all, one after another. On another occaſion, a hedge-hog that had made its way into the kitchen, diſcovered a little pot, in which there was meat prepared for boiling; the miſchievous animal drew out the meat, and left its excrements in

The Hedge Hog.

Fig. 1. without the Bristles.

De Seve del. Jno. Taylor sculp.

The Tanreck.

the ſtead. I kept males and females in the ſame apartment, where they lived together but never coupled. I permitted ſeveral of them to go about my garden; they did very little damage, and it was ſcarcely perceivable that they were there: they lived upon the fruits that fell from the trees; they dug the earth into ſhallow holes; they eat caterpillars, beetles, and worms; they were alſo very fond of fleſh, which they devoured boiled or raw."

They couple in ſpring, and bring forth about the beginning of ſummer. They ſleep during the winter, and what is ſaid of their laying up proviſions for that ſeaſon, is conſequently falſe. They at no time eat much, and can remain very long without any food whatſoever. Their blood is cold, like all other animals that ſleep during the winter. Their fleſh is not good for food; and their ſkins are converted to ſcarce any uſe, except to muzzle calves, to keep them from ſucking.

THE TANREC AND TENDRAC.

THE Tanrec and Tendrac, are two little animals, deſcribed by Mr. Buffon, of the hedge-hog kind; but yet ſufficiently different from it, to conſtitute a different ſpecies. Like

the hedge-hog, they are covered with prickles, though mixed in a greater proportion with hair; but unlike that animal, they do not defend themſelves by rolling up in a ball. Their wanting this laſt property is alone ſufficient to diſtinguiſh them from an animal in which it makes the moſt ſtriking peculiarity: as alſo, that in the Eaſt Indies, where only they are found, the hedge-hog exiſts ſeparately alſo: a manifeſt proof that this animal is not a variety cauſed by the climate.

The Tanrec is much leſs than the hedge-hog *, being about the ſize of a mole, and covered with prickles, like that animal, except that they are ſhorter and ſmaller. The Tendrac is ſtill leſs than the former, and is defended only with prickles upon the head, the neck and the ſhoulders; the reſt being covered with a coarſe hair, reſembling an hog's briſtles. Theſe little animals, whoſe legs are very ſhort, move but ſlowly. They grunt like a hog; and wallow, like it, in the mire. They love to be near water; and ſpend more of their time there than upon land. They are chiefly in creeks and harbours of ſalt water. They multiply in great numbers, make themſelves holes in the ground, and ſleep for ſeveral months.

* Buffon, vol. xxv. p. 254.

De Seve del. Js. Taylor sculp

The Porcupine

During this torpid ſtate, their hairs (and I ſhould alſo ſuppoſe their prickles) fall; and they are renewed upon their revival. They are uſually very fat; and although their fleſh be inſipid, ſoft, and ſtringy, yet the Indians find it to their taſte, and conſider it as a very great delicacy.

THE PORCUPINE.

THOSE arms which the hedge-hog poſſeſſes in miniature, the Porcupine has in a more enlarged degree. The ſhort prickles of the hedge-hog are in this animal converted into ſhafts. In the one the ſpines are about an inch long; in the other, a foot. The porcupine is about two feet long, and fifteen inches high. Like the hedge-hog, it appears a maſs of misſhapen fleſh, covered with quills, from ten to fourteen inches long, reſembling the barrel of a gooſe-quill in thickneſs; but tapering and ſharp at both ends. Theſe, whether conſidered ſeparately or together, afford ſufficient ſubject to detain curioſity. Each quill is thickeſt in the middle; and inſerted into the animal's ſkin, in the ſame manner as feathers are found to grow upon birds. It is within ſide ſpongy, like the top

of a goose-quill; and of different colours, being white and black alternately, from one end to the other. The biggest are often found fifteen inches long, and a quarter of an inch in diameter; extremely sharp, and capable of inflicting a mortal wound. They seem harder than common quills, being difficult to be cut, and solid at that end which is not fixed in the skin. If we examine them in common, as they grow upon the animal, they appear of two kinds; the one such as I have already described; the other, long, flexible and slender, growing here and there among the former. There is still another sort of quills, that grow near the tail, white and transparent, like writing quills, and that seem to be cut short at the end. All these quills, of whatsoever kind, incline backwards, like the bristles of an hog; but when the animal is irritated, they rise, and stand upright, as bristles are seen to do.

Such is the formation of this quadrupede, in those parts in which it differs from most others: as to the rest of its figure, the muzzle bears some resemblance to that of an hare, but black; the legs are very short, and the feet have five toes, both before and behind; and these, as well as the belly, the head, and all other parts of the body, are covered with a sort of short hair, like

8

prickles, there being no part, except the ears and the ſole of the foot, that is free from them: the ears are thinly covered with very fine hair; and are in ſhape like thoſe of mankind: the eyes are ſmall, like thoſe of a hog, being only one third of an inch from one corner to the other. After the ſkin is taken off, there appear a kind of paps on thoſe parts of the body from whence the large quills proceed; theſe are about the ſize of a ſmall pea, each anſwering to as many holes which appear on the outward ſurface of the ſkin, and which are about half an inch deep, like as many hollow pipes, wherein the quills are fixed, as in ſo many ſheaths.

This animal ſeems to partake very much of the nature of the hedge-hog; having this formidable apparatus of arms rather to defend itſelf, than annoy the enemy. There have been, indeed, many naturaliſts who ſuppoſed that it was capable of diſcharging them at its foes, and killing at a great diſtance off. But this opinion has been entirely diſcredited of late; and it is now univerſally believed that its quills remain firmly fixed in the ſkin, and are then only ſhed when the animal moults them, as birds do their feathers. It is true, we are told by Ellis, that a wolf at Hudſon's Bay was found dead, with the quills of a porcupine fixed within its mouth;

which might have very well happened, from the voraciouſneſs of the former, and not the reſentment of the latter. That rapacious creature, in the rage of appetite, might have attempted to devour the porcupine, quills and all, and very probably paid the forfeit, by its life. However this be, of all the porcupines that have been brought into Europe, not one was ever ſeen to launch their quills; and yet the irritations they received were ſufficient to have provoked their utmoſt indignation. Of all the porcupines that Doctor Shaw obſerved in Africa, and he ſaw numbers, not one ever attempted to dart its quills; their uſual manner of defence being, to lie on one ſide, and when the enemy approaches very near, by ſuddenly riſing, to wound him with the points on the other.

It is probable, therefore, that the porcupine is ſeldom the aggreſſor; and when attacked by the bolder animals, it only directs its quills ſo as to keep always pointing towards the enemy. Theſe are an ample protection; and, as we are aſſured by Kolben, at ſuch times, even the lion himſelf will not venture to make an attack. From ſuch, therefore, the porcupine can defend itſelf; and chiefly hunts for ſerpents, and all other reptiles, for ſubſiſtence. Travellers univerſally aſſure us that, between the ſerpent and

the porcupine there exiſt an irreconcileable enmity, and that they never meet without a mortal engagement *. The porcupine, on theſe occaſions, is ſaid to roll itſelf upon the ſerpent, and thus deſtroy and devour it. This may be true; while what we are informed by Monſieur Sarraſin, of the porcupine of Canada chiefly ſubſiſting on vegetables, may be equally ſo. Thoſe which are brought to this country to be ſhewn, are uſually fed on bread, milk, and fruits; but they will not refuſe meat when it is offered them; and it is probable, they prefer it in a wild ſtate, when it is to be had †. The porcupine is alſo known to be extremely hurtful to gardens; and, where it enters, does incredible damage.

The Americans, who hunt this animal, aſſure us, that the porcupine lives from twelve to fifteen years. During the time of coupling, which is in the month of September, the males become very fierce and dangerous, and often are ſeen to deſtroy each other with their teeth. The female goes with young ſeven months, and brings forth but one at a time; this ſhe ſuckles for about a month, and accuſtoms it betimes to live, like herſelf, upon vegetables and the

* Boſman. Smith. L. P. Vincent Marie, &c.
† Buffon.

bark of trees; ſhe is very fierce in its defence; but, at other ſeaſons, ſhe is fearful, timid, and harmleſs. The porcupine never attempts to bite, nor any way to injure its purſuers: if hunted by a dog or a wolf, it inſtantly climbs up a tree, and continues there until it has wearied out the patience of its adverſary; the wolf knows by experience how fruitleſs it would be to wait, he therefore leaves the porcupine above, and ſeeks out for a new adventure.

The porcupine does not eſcape ſo well from the Indian hunter, who eagerly purſues it, in order to make embroidery of its quills, and to eat its fleſh. This, as we are commonly told, is very tolerable eating; however, we may expect wretched proviſions when the ſavages are to be our caterers, for they eat every thing that has life. But they are very ingenious with regard to their embroidery: if I underſtand the accounts rightly, they dye the quills of various colours, and then ſplitting them into ſlips, as we ſee in the making of a cane-chair, they embroider, with theſe, their belts, baſkets, and ſeveral other neceſſary pieces of furniture.

As to the reſt, there are many things related concerning this animal that are fabulous; but there are ſtill many circumſtances more, that yet remain to be known. It were curious to

enquire

enquire whether this animal molts its quills when wild, for it is never ſeen to ſhed them in a domeſtic ſtate; whether it ſleeps all the winter, as we are told by ſome naturaliſts, which we are ſure it does not when brought into our country; and, laſtly, whether its quills can be ſent off with a ſhake; for no leſs a naturaliſt than Reaumur was of that opinion.

All that we can learn of an animal expoſed as a ſhew, or even by its diſſection, is but merely its conformation; and that makes one of the leaſt intereſting parts of its hiſtory. We are naturally led, when preſented with an extraordinary creature, to expect ſomething extraordinary in its way of living, ſomething uncommon, and correſponding with its figure; but of this animal we know little with any preciſion, except what it offers in a ſtate of captivity. In ſuch a ſituation, that which I ſaw appeared to very little advantage: it was extremely dull and torpid, though very wakeful; and extremely voracious, though very capable of ſuſtaining hunger; as averſe to any attachment, as to being tamed: it was kept in an iron cage, and the touching one of the bars was ſufficient to excite its reſentment, for its quills were inſtantly erected; and the poet was right in his epithet of fretful, for

it appeared to me the moſt iraſcible creature upon earth.

The porcupines of America differ very much from that of the ancient continent, which we have been deſcribing; and, ſtrictly ſpeaking, may be conſidered as animals of a different ſpecies: however, from their being covered with quills, we will only add them as varieties of the former, ſince we know very little concerning them, except their difference of figure. They are of two kinds; the one called the Couando; and the other, firſt named by Mr. Buffon, the Urſon: the one a native of the northern parts of America, the other of the ſouth; and both differing from the former, in having long tails, whereas that has a very ſhort one.

The Couando is much leſs than the porcupine; its quills are four times ſhorter, its ſnout more unlike that of an hare; its tail is long enough to catch by the branches of trees, and hold by them. It may be eaſily tamed, and is to be found chiefly in the ſouthern parts of America; yet is not wanting alſo in the northern.

The Urſon, which Mr. Buffon calls after our countryman Hudſon, is a native of Hudſon's Bay. The make of the body of this

animal is not ſo round as that of the two former, but ſomewhat reſembling the ſhape of a pig. It is covered with long briſtly hair, with a ſhorter hair underneath; and under this the quills lie concealed very thick; they are white, with a brown point, and bearded, and the longeſt do not exceed four inches; they ſtick to the hand when the animal is ſtroked on the back; and likewiſe, when the hand is taken away, they ſtick ſo faſt as to follow it. They make their neſt under the roots of great trees, ſleep very much, and chiefly feed upon the bark of the juniper. In winter the ſnow ſerves them for drink; and in ſummer they lap water, like a dog. They are very common in the country lying to the eaſt of Hudſon's Bay; and ſeveral of the trading Americans depend on them for food, at ſome ſeaſons of the year.

C H A P. IV.

Of Quadrupedes covered with Scales or Shells inſtead of Hair *.

WHEN we talk of a quadrupede, the name ſeems to imply an animal covered with hair; when we mention a bird, it is natural to conceive a creature covered with feathers; when we hear of a fiſh, its ſcales are generally the firſt part that ſtrikes our imagination. Nature, however, owns none of our diſtinctions; various in all her operations, ſhe mixes her plans, groupes her pictures, and excites our wonder as well by her general laws as by her deviations. Quadrupedes, which we have conſidered as making the firſt general claſs in animated nature, and next to man the moſt dignified tenants of the earth, are yet in many reſpects related to the claſſes beneath them, and do not in every reſpect preſerve their uſual diſtinctions. Their firſt character, which conſiſts in having four feet,

* This chapter is chiefly extracted from Mr. Buffon, which I mention at once, to ſave the trouble of repeated quotation.

common to the lizard kind as well as to them. The ſecond prerogative, which is that of bringing forth living young, is found in the cetaceous tribe of fiſhes, and alſo in inſects without number. Their third and laſt attribute, which ſeems more general and conſtant than the former, that of being covered with hair, is yet found in various other animals, and is deficient in quadrupedes themſelves. Thus we muſt be cautious of judging of the nature of animals from one ſingle character, which is always found incomplete; for it often happens that three or four of the moſt general characters will not ſuffice. It muſt be by a general enumeration of the parts that we can determine preciſely of the works of the creation; and, inſtead of definitions, learn to deſcribe. Had this method been followed, much of the diſguſt and the intricacy of hiſtory might have been avoided, and that time, which is now employed in combating error, laid out in the promoting of ſcience.

Were we to judge of nature from definitions only, we ſhould never be induced to ſuppoſe that there exiſted races of viviparous quadrupedes deſtitute of hair, and furniſhed with ſcales and ſhells in their ſtead. However, nature, every way various, ſupplies us with many in-

ſtances of theſe extraordinary creatures; the old world has its quadrupedes covered with ſcales, and the new with a ſhell. In both they reſemble each other, as well in the ſtrangeneſs of their appetites, as in their aukward conformation. Like animals but partially made up, and partaking of different natures, they want thoſe inſtincts which animals formed but for one element alone are found to poſſeſs. They ſeem to be a kind of ſtrangers in nature, creatures taken from ſome other element, and capriciouſly thrown to find a precarious ſubſiſtence upon land.

The Pangolin, which has been uſually called the Scaly Lizard, Mr. Buffon very judiciouſly reſtores to that denomination by which it is known in the countries where it is found. The calling it a lizard, he juſtly obſerves, might be apt to produce error, and occaſion its being confounded with an animal which it reſembles only in its general form, and in its being covered with ſcales. The lizard may be conſidered as a reptile, produced from an egg; the pangolin is a quadrupede, and brought forth alive and perfectly formed. The lizard is all over covered with the marks of ſcales; the pangolin has ſcales neither on the throat, the breaſt, or the

De Seve del. Js. Taylor sculp.

The Pangolin.

belly. The ſcales of the lizard ſeem ſtuck upon the body even cloſer than thoſe of fiſhes; the ſcales of the pangolin are only fixed at one end, and capable of being erected, like thoſe of the porcupine, at the will of the animal. The lizard is a defenceleſs creature; the pangolin can roll itſelf into a ball, like the hedge-hog, and preſent the points of its ſcales to the enemy, which effectually defend it.

The pangolin, which is a native of the torrid climates of the ancient continent, is, of all other animals, the beſt protected from external injury by Nature. It is about three or four feet long, or, taking in the tail, from ſix to eight. Like the lizard, it has a ſmall head, a very long noſe, a ſhort thick neck, a long body, legs very ſhort, and a tail extremely long, thick at the inſertion, and terminating in a point. It has no teeth, but is armed with five toes on each foot, with long white claws. But what it is chiefly diſtinguiſhed by is its ſcaly covering, which in ſome meaſure hides all the proportions of its body. Theſe ſcales defend the animal on all parts, except the under part of the head and neck, under the ſhoulders, the breaſt, the belly, and the inner ſide of the legs; all which parts are covered with a ſmooth ſoft ſkin, with-

out hair. Between the ſhells of this animal, at all the interſtices, are ſeen hairs like briſtles, brown at the extremity, and yellow towards the root. The ſcales of this extraordinary creature are of different ſizes and different forms, and ſtuck upon the body ſomewhat like the leaves of an artichoak. The largeſt are found near the tail, which is covered with them like the reſt of the body. Theſe are above three inches broad, and about two inches long, thick in the middle, and ſharp at the edges, and terminated in a roundiſh point. They are extremely hard, and their ſubſtance reſembles that of horn. They are convex on the outſide, and a little concave on the inner; one edge ſticks in the ſkin, while the other laps over that immediately behind it. Thoſe that cover the tail conform to the ſhape of that part, being of a duſky brown colour, and ſo hard, when the animal has acquired its full growth, as to turn a muſquet-ball.

Thus armed, this animal fears nothing from the efforts of all other creatures, except man. The inſtant it perceives the approach of an enemy, it rolls itſelf up like the hedge-hog, and preſents no part but the cutting edges of its ſcales to the aſſailant. Its long tail, which,

at firſt view, might be thought eaſily ſeparable, ſerves ſtill more to encreaſe the animal's ſecurity. This is lapped round the reſt of the body, and, being defended with ſhells even more cutting than any other part, the creature continues in perfect ſecurity. Its ſhells are ſo large, ſo thick, and ſo pointed, that they repel every animal of prey; they make a coat of armour that wounds while it reſiſts, and at once protects and threatens. The moſt cruel, the moſt famiſhed quadrupede of the foreſt, the tiger, the panther, and the hyæna, make vain attempts to force it. They tread upon, they roll it about, but all to no purpoſe; the pangolin remains ſafe within, while its invader almoſt always feels the reward of its raſhneſs. The fox often deſtroys the hedgehog by preſſing it with his weight, and thus obliges it to put forth its noſe, which he inſtantly ſeizes, and ſoon after the whole body; but the ſcales of the pangolin effectually ſupport it under any ſuch weight, while nothing that the ſtrongeſt animals are capable of doing can compel it to ſurrender. Man alone ſeems furniſhed with arms to conquer its obſtinacy. The Negroes of Africa, when they find it, beat it to death with clubs, and conſider its fleſh as a very great delicacy.

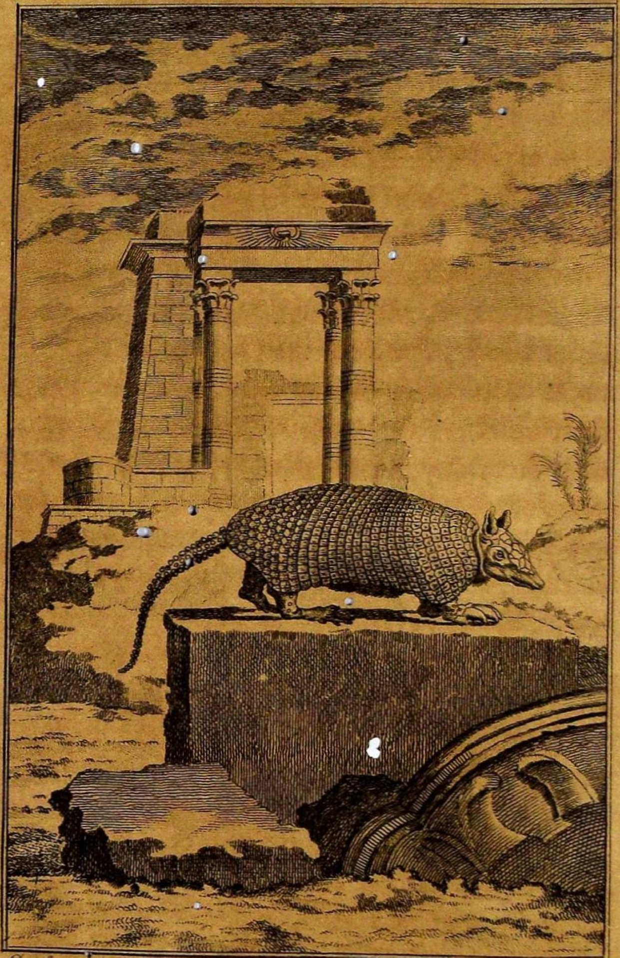
But, although this animal be ſo formidable in its appearance, there cannot be a more harmleſs inoffenſive creature when unmoleſted. It is even unqualified by Nature to injure larger animals, if it had the diſpoſition, for it has no teeth. It ſhould ſeem that the bony matter, which goes in other animals to ſupply the teeth, is exhauſted in this in ſupplying the ſcales that go to the covering of its body. However this be, its life ſeems correſpondent to its peculiar conformation. Incapable of being carnivorous, ſince it has no teeth, nor of ſubſiſting on vegetables, which require much chewing, it lives entirely upon inſects, for which Nature has fitted it in a very extraordinary manner. As it has a long noſe, ſo it may naturally be ſuppoſed to have a long tongue; but, to encreaſe its length ſtill more, it is doubled in the mouth, ſo that when extended it is ſhot out to above a quarter of a yard beyond the tip of the noſe. This tongue is round, extremely red, and covered with an unctuous and ſlimy liquor, which gives it a ſhining hue. When the pangolin, therefore, approaches an ant hill, for theſe are the inſects on which it chiefly feeds, it lies down near it, concealing as much as poſſible the place of its retreat, and ſtretching out its long tongue

among the ants, keeps it for ſome time quite immoveable. Theſe little animals, allured by its appearance, and the unctuous ſubſtance with which it is ſmeared, inſtantly gather upon it in great numbers; and when the pangolin ſuppoſes a ſufficiency, it quickly withdraws the tongue, and ſwallows them at once. This peculiar manner of hunting for its prey is repeated either till it be ſatisfied, or till the ants, grown more cautious, will be allured to their deſtruction no longer. It is againſt theſe noxious inſects, therefore, that its only force or cunning is exerted; and were the Negroes but ſufficiently ſenſible of its utility in deſtroying one of the greateſt peſts to their country, they would not be ſo eager to kill it. But it is the nature of ſavage men to purſue the immediate good, without being ſolicitous about the more diſtant benefit they remove. They, therefore, hunt this animal, with the utmoſt avidity, for its fleſh; and, as it is ſlow and unable to eſcape in an open place, they ſeldom fail of deſtroying it. However, it chiefly keeps in the moſt obſcure parts of the foreſt, and digs itſelf a retreat in the clefts of rocks, where it brings forth its young, ſo that it is but rarely met with, and continues a ſolitary ſpecies, and an extraordinary inſtance of the varying of Nature.

Of this animal, there is a variety which is called the Phatagin, much leſs than the former, being not above a foot long from the head to the tail, with ſhells differently formed, with its belly, breaſt, and throat covered with hair, inſtead of a ſmooth ſkin as in the former; but that by which it is peculiarly diſtinguiſhed is the extent of its tail, which is above twice the length of its body. Both are found in the warm latitudes of the Eaſt, as well as in Africa; and, as their numbers are but few, it is to be ſuppoſed their fecundity is not great.

THE ARMADILLO OR TATOU.

HAVING mentioned quadrupedes of the ancient continent covered with ſcales, we come next to quadrupedes of the new continent covered with ſhells. It would ſeem that Nature had reſerved all the wonders of her power for theſe remote and thinly inhabited countries, where the men are ſavage and the quadrupedes various. It would ſeem that ſhe becomes more extraordinary in proportion as ſhe retires from human inſpection. But the real fact is, that wherever mankind are poliſhed, or thickly planted, they ſoon rid the earth of theſe odd



De Seve del. J^s. Taylor sculp.

The Armadillo.

and half formed productions, that in some measure encumber the soil. They soon disappear in a cultivated country, and continue to exist only in those remote deserts where they have no enemies but such as they are enabled to oppose.

The Armadillo is chiefly an inhabitant of South America; a peaceful harmless creature, incapable of offending any other quadrupede, and furnished with a peculiar covering for its own defence. The pangolin, described above, seems an inactive helpless being, indebted for safety more to its patience than its power; but the armadillo is still more exposed and helpless. The pangolin is furnished with an armour that wounds while it resists, and that is never attacked with impunity; but the armadillo is obliged to submit to every insult, without any power of repelling its enemy; it is attacked without danger, and is consequently liable to more various persecutions.

This animal being covered, like a tortoise, with a shell, or rather a number of shells, its other proportions are not easily discerned. It appears, at first view, a round mishapen mass, with a long head, and a very large tail sticking out at either end, as if not of a piece with the

reſt of the body. It is of different ſizes, from a foot to three feet long, and covered with a ſhell divided into ſeveral pieces, that lap over each other like the plates in a coat of armour, or in the tail of a lobſter. The difference in the ſize of this animal, and alſo the different diſpoſition and number of its plates, have been conſidered as conſtituting ſo many ſpecies, each marked with its own particular name. In all, however, the animal is partially covered with this natural coat of mail; the conformation of which affords one of the moſt ſtriking curioſities in natural hiſtory. This ſhell, which in every reſpect reſembles a bony ſubſtance, covers the head, the neck, the back, the ſides, the rump, and the tail to the very point. The only parts to which it does not extend are, the throat, the breaſt, and the belly, which are covered with a white ſoft ſkin, ſomewhat reſembling that of a fowl ſtripped of its feathers. If theſe naked parts be obſerved with attention, they will be found covered with the rudiments of ſhells, of the ſame ſubſtance with thoſe which cover the back. The ſkin, even in the parts that are ſofteſt, ſeems to have a tendency to oſſify; but a complete oſſification takes place only on thoſe parts which have the laſt friction, and are the

moſt expoſed to the weather. The ſhell, which covers the upper part of the body, differs from that of the tortoiſe, in being compoſed of more pieces than one, which lie in bands over the body, and, as in the tail of the lobſter, ſlide over each other, and are connected by a yellow membrane iu the ſame manner. By this means the animal has a motion in its back, and the armour gives way to its neceſſary inflexions. Theſe bands are of various numbers and ſizes, and from them theſe animals have been diſtinguiſhed into various kinds. In general, however, there are two large pieces that cover, one the ſhoulders and the other the rump. In the back, between theſe, the bands are placed in different numbers, that lap over each other, and give play to the whole. Beſides their opening croſs-ways, they alſo open down along the back, ſo that the animal can move in every direction. In ſome there are but three of theſe bands between the large pieces; in others there are ſix; in a third kind there are eight; in a fourth kind, nine; in a fifth kind, twelve; and, laſtly, in the ſixth kind there is but one large piece, which covers the ſhoulders, and the reſt of the body is covered with bands all down to the tail. Theſe ſhells are differently coloured

in different kinds, but moſt uſually they are of a dirty grey. This colour in all ariſes from another peculiar circumſtance in their conformation, for the ſhell itſelf is covered with a ſoftiſh ſkin, which is ſmooth and tranſparent.

But, although theſe ſhells might eaſily defend this animal from a feeble enemy, yet they could make but a ſlight reſiſtance againſt a more powerful antagoniſt; Nature, therefore, has given the armadillo the ſame method of protecting itſelf with the hedge-hog or the pangolin. The inſtant it perceives itſelf attacked, it withdraws the head under its ſhells, and lets nothing be ſeen but the tip of the noſe; if the danger encreaſes, the animal's precautions encreaſe in proportion; it then tucks up its feet under its belly, unites its two extremities together, while the tail ſeems as a band to ſtrengthen the connection; and it thus becomes like a ball, a little flattiſh on each ſide. In this poſition it continues obſtinately fixed, while the danger is near, and often long after it is over. In this ſituation it is toſſed about at the pleaſure of every other quadrupede, and very little reſembling a creature endowed with life and motion. Whenever the Indians take it, which is in this form, by laying it cloſe to the

fire,

fire, they foon oblige the poor animal to unfold itfelf, and to face a milder death to efcape a more fevere.

This animal is a native only of America, for they were utterly unknown before the difcovery of that continent. It is an inoffenfive harmlefs creature, unlefs it finds the way into a garden, where it does a great deal of mifchief, by eating the melons, the potatoes, and other vegetables. Although a native of the warmeft parts of America, yet it bears the cold of our climate without any inconvenience. We have often feen them fhewn among other wild beafts, which is a proof they are not difficult to be brought over. Their motion feems to be a fwift walk, but they can neither run, leap, nor climb trees; fo that, if found in an open place, they have no method of efcaping from their purfuers. Their only refource in fuch an extremity is to make towards their hole as faft as they can; or, if this be impracticable, to make a new hole before the enemy arrives. For this they require but a very few moments advantage; the mole itfelf does not burrow fwifter than they can. For this purpofe, they are furnifhed with claws extremely large, ftrong, and crooked, and ufually four upon each foot. They are fometimes caught by the tail as they

are making their way into the earth; but ſuch is their reſiſtance, and ſo difficult it is to draw them backward, that they leave their tail in the hand of their purſuer, and are very well contented to ſave their lives with its loſs. The purſuers, ſenſible of this, never drag the tail with all their force, but hold it while another digs the ground about them; and thus theſe animals are taken alive. The inſtant the armadillo perceives itſelf in the power of its enemies, it has but one laſt reſource, to roll itſelf up, and thus patiently wait whatever tortures they think proper to inflict. The fleſh of the ſmaller kinds is ſaid to be delicate eating; ſo that we may ſuppoſe they receive no mercy. For this reaſon, they are purſued with unceaſing induſtry; and, although they burrow very deep in the earth, there have been many expedients uſed to force them out. The hunters ſometimes contrive to fill the hole with ſmoke, which is often ſucceſsful; they at other times force it by pouring in water. They alſo bring up a ſmall kind of dogs to the chace that quickly overtake them, if at any diſtance from their burrow, and oblige them to roll themſelves up in a ball, in which figure the hunters carry them home. If, however, the armadillo be near a precipice, it often eſcapes by rolling itſelf up,

and then tumbling down from rock to rock, without the leaſt danger or inconvenience. They are ſometimes taken in ſnares laid for them by the ſides of rivers and low moiſt places, which they particularly frequent; and this method, in general, ſucceeds better than any of the former, as their burrows are very deep, and they ſeldom ſtir out except in the night. At no time are they found at any great diſtance from their retreats, ſo that it requires ſome patience and ſkill to intercept their retreat.

There are ſcarce any of theſe that do not root the ground, like a hog, in ſearch of ſuch roots as make a principal part of their food. They live alſo upon melons and other ſucculent vegetables, and all will eat fleſh when they can get it. They frequent water and watery places, where they feed upon worms, ſmall fiſh, and water inſects. It is pretended that there is a kind of friendſhip between them and the rattle-ſnake, that they live peaceably and commodiouſly together, and are frequently found in the ſame hole. This, however, may be a friendſhip of neceſſity to the armadillo; the rattle-ſnake takes poſſeſſion of its retreats, which neither are willing to quit while each is incapable of injuring the other.

As to the reſt, theſe animals, though they

all refemble each other in the general character of being cloathed with a fhell, yet differ a good deal in their fize, and in the parts into which their fhell is divided. The firft of this kind, which has but three bands between the two large pieces that cover the back, is called the Tatu Apara. I will not enter into an exact defcription of its figure, which, how well written foever, no imagination could exactly conceive; and the reader would be more fatigued to underftand than I to write it. The tail is fhorter in this than any other kind, being not more than two inches long, while the fhell, taking all the pieces together, is a foot long and eight inches broad. The fecond is the Tatou of Ray, or the Encoubert of Buffon; this is diftinguifhed from the reft by fix bands acrofs the back; it is about the fize of a pig of a month old, with a fmall long head and a very long tail. The third is the Tatuette, furnifhed with eight bands, and not by a great deal fo big as the former. Its tail is longer alfo, and its legs fhorter in proportion. Its body, from the nofe to the infertion of the tail, is about ten inches long, and the tail feven. The fourth is the Pig-headed Armadillo, with nine bands. This is much larger than the former, being about two foot long from the nofe to the tail. The fifth is the

Kabaſſou, or Cataphractus, with twelve bands, and ſtill bigger than the former, or any other of its kind. This is often found above three feet long, but is never eaten as the reſt are. The ſixth is the Weaſel-headed Armadillo, with eighteen bands, with a large piece before, and nothing but bands backward. This is above a foot long, and the tail five inches. Of all theſe, the Kabaſſou and the Encoubert are the largeſt; the reſt are of a much ſmaller kind. In the larger kinds, the ſhell is much more ſolid than in the others, and the fleſh is much harder and unfit for the table. Theſe are generally ſeen to reſide in dry upland grounds, while the ſmall ſpecies are always found in moiſt places, and in the neighbourhood of brooks and rivers. They all roll themſelves into a ball; but thoſe whoſe bands are feweſt in number are leaſt capable of covering themſelves up completely. The Tatu Apara, for inſtance, when rolled up, preſents two great interſtices between its bands, by which it is very eaſily vulnerable, even by the feebleſt of quadrupedes.

CHAP. V.

Of Animals of the Bat Kind.

HAVING in the laſt chapter deſcribed a race of animals that unite the boundaries between quadrupedes and inſects, I come in this to a very different claſs, that ſerve to fill up the chaſm between quadrupedes and birds. Some naturaliſts, indeed, have found animals of the bat kind ſo much partaking of the nature of both, that they have been at a loſs in which rank to place them, and have doubted, in giving the hiſtory of the Bat, whether it was a beaſt or a bird they were deſcribing. Theſe doubts, however, no longer exiſt; they are now univerſally made to take their place among quadrupedes, to which their bringing forth their young alive, their hair, their teeth, as well as the reſt of their habitudes and conformation, evidently entitle them. Pliny, Geſner, and Aldrovandus, who placed them among birds, did not conſider that they wanted every character of that order of animals, except the power of flying. Indeed, when this animal is ſeen with an aukward and ſtruggling motion, ſupporting itſelf in the air at the duſk of the evening, it preſents in ſome meaſure the

appearance of a bird; but naturaliſts, whoſe buſineſs it is to examine it more cloſely, to watch its habitudes, and inſpect into its formation, are inexcuſable for concurring in the miſtake.

The bat in ſcarce any particular reſembles the bird, except in its power of ſuſtaining itſelf in the air. It brings forth its young alive; it ſuckles them; its mouth is furniſhed with teeth; its lungs are formed like thoſe of quadrupedes; its inteſtines, and its ſkeleton, have a complete reſemblance, and even are, in ſome meaſure, ſeen to reſemble thoſe of mankind *.

The bat moſt common in England, is about the ſize of a mouſe; or nearly two inches and an half long. The membranes that are uſually called wings, are, properly ſpeaking, an extenſion of the ſkin all round the body, except the head, which, when the animal flies, is kept ſtretched on every ſide, by the four interior toes of the fore feet, which are enormouſly long, and ſerve like maſts that keep the canvaſs of a ſail ſpread, and regulate its motions †. The firſt toe is quite looſe, and ſerves as a heel when the bat walks, or as an hook, when it would adhere to any thing. The hind feet are diſengaged from the ſurrounding ſkin,

* Penis propendens. † Britiſh Zoology.

and divided into five toes, ſomewhat reſembling thoſe of a mouſe. The ſkin by which it flies is of a duſky colour. The body is covered with a ſhort fur, of a mouſe colour, tinged with red. The eyes are very ſmall; the ears like thoſe of a mouſe.

This ſpecies of the bat is very common in England. It makes its firſt appearance early in ſummer, and begins its flight in the duſk of the evening. It principally frequents the ſides of woods, glades, and ſhady walks; and is frequently obſerved to ſkim along the ſurface of pieces of water. It purſues gnats, moths, and nocturnal inſects of every kind. It feeds upon theſe; but will not refuſe meat, wherever it can find it. Its flight is a laborious, irregular movement; and if it happens to be interrupted in its courſe, it cannot readily prepare for a ſecond elevation; ſo that if it ſtrikes againſt any object, and falls to the ground, it is uſually taken. It appears only in the moſt pleaſant evenings, when its prey is generally abroad, and flies in purſuit with its mouth open. At other times it continues in its retreat, the chink of a ruined building, or the hollow of a tree. Thus this little animal, even in ſummer, ſleeps the greateſt part of its time, never venturing out by day-light, nor in rainy

weather; never hunting in queſt of prey, but for a ſmall part of the night, and then returning to its hole. But its ſhort life is ſtill more abridged by continuing in a torpid ſtate, during the winter. At the approach of the cold ſeaſon, the bat prepares for its ſtate of lifeleſs inactivity, and ſeems rather to chuſe a place where it may continue ſafe from interruption, than where it may be warmly or conveniently lodged. For this reaſon it is uſually ſeen hanging by its hooked claws to the roofs of caves, regardleſs of the eternal damps that ſurround it. The bat ſeems the only animal that will venture to remain in theſe frightful ſubterranean abodes, where it continues in a torpid ſtate, unaffected by every change of the weather. Such of this kind as are not provident enough to procure themſelves a deep retreat, where the cold and heat ſeldom vary, are ſometimes expoſed to great inconveniences, for the weather often becomes ſo mild in the midſt of winter as to warm them prematurely into life, and to allure them from their holes in queſt of food, when Nature has not provided a ſupply. Theſe, therefore, have ſeldom ſtrength to return; but, having exhauſted themſelves in a vain purſuit, after inſects which are not to be found, are deſtroyed by the owl, or any other animal that follows ſuch petty prey.

The bat couples and brings forth in ſummer, generally from two to five at a time: of this I am certain, that I have found five young ones in a hole together; but whether they were the iſſue of one parent, I cannot tell. The female has but two nipples, and thoſe forward on the breaſt, as in the human kind. This was a ſufficient motive for Linnæus to give it the title of a Primas, to rank it in the ſame order with mankind; and to puſh this contemptible animal among the chiefs of the creation. Such arbitrary aſſociations produce rather ridicule than inſtruction, and render even method contemptible: however, we are to forgive too ſtrong an attachment to ſyſtem in this able naturaliſt, ſince his application to the particular hiſtory of the animal, counterbalances the defect *.

From Linnæus we learn, that the female makes no neſt for her young, as moſt birds and quadrupedes are known to do. She is barely content with the firſt hole ſhe meets, where ſticking herſelf by her hooks againſt the ſides of her apartment, ſhe permits her young to hang at the nipple, and in this manner to continue for the firſt or ſecond day. When, after ſome time, the dam begins to grow hungry, and finds a neceſſity of ſtirring abroad, ſhe takes her little

* Fauna Suecia, p. 8.

ones and ſticks them to the wall, in the manner ſhe before hung herſelf; there they immoveably cling, and patiently wait till her return.

Thus far this animal ſeems cloſely allied to the quadrupede race. Its ſimilitude to that of birds is leſs ſtriking. As nature has furniſhed birds with extremely ſtrong pectoral muſcles, to move the wings, and direct their flight, ſo has it alſo furniſhed this animal. As birds alſo have their legs weak, and unfit for the purpoſes of motion, the bat has its legs faſhioned in the ſame manner, and never ſeen to walk, or, more properly ſpeaking, to puſh itſelf forward with its hind legs, but in caſes of extreme neceſſity. The toes of the fore legs, or, if we may uſe the expreſſion, its extremely long fingers, extend the web like a membrane that lies between them; and this, which is extremely thin, ſerves to lift the little body into the air: in this manner, by an unceaſing percuſſion, much ſwifter than that of birds, the animal continues, and directs its flight; however, the great labour required in flying, ſoon fatigues it; for, unlike birds, which continue for days together upon the wing, the bat is tired in leſs than an hour, and then returns to its hole, ſatisfied with its ſupply, to enjoy the darkneſs of its retreat.

If we conſider the bat as it is ſeen in our own country, we ſhall find in an harmleſs, inoffenſive creature. It is true that it now and then ſteals into a larder, and, like a mouſe, commits its petty thefts upon the fatteſt parts of the bacon. But this happens ſeldom; the general tenor of its induſtry is employed in purſuing inſects that are much more noxious to us than itſelf can poſſibly be; while its evening flight, and its unſteady wabbling motion, amuſe the imagination, and add one figure more to the pleaſing groupe of animated nature.

The varieties of this animal, eſpecially in our country, are but few; and the differences ſcarce worth enumeration. Naturaliſts mention the Long-eared Bat, much leſs than that generally ſeen, and with much longer ears; the Horſe-ſhoe Bat, with an odd protuberance round its upper lip, ſomewhat in the form of a horſe-ſhoe; the Rhinoceros Bat, with a horn growing from the noſe, ſomewhat ſimilar to that animal from whence it has the name. Theſe, with ſeveral others, whoſe varieties are too numerous, and differences too minute for a detail, are all inoffenſive, minute, and contemptible; incapable, from their ſize, of injuring mankind, and not ſufficiently numerous much to incommode him. But there is a larger race of bats, found in the

East and West-Indies, that are truly formidable; each of these is singly a dangerous enemy; but when they unite in flocks, they then become dreadful. Were the inhabitants of the African coasts *, says Des Marchais, to eat animals of the bat kind, as they do in the East-Indies, they would never want a supply of provisions. They are there in such numbers, that, when they fly, they obscure the setting sun. In the morning, at peep of day, they are seen sticking upon the tops of the trees, and clinging to each other, like bees when they swarm, or like large clusters of coco. The Europeans often amuse themselves with shooting among this huge mass of living creatures, and observing their embarrassment when wounded. They sometimes enter the houses, and the Negroes are expert at killing them; but although these people seem for ever hungry, yet they regard the bat with horror, and will not eat it, though ready to starve.

Of foreign bats, the largest we have any certain accounts of, is the Rousette, or the Great Bat of Madagascar. This formidable creature is near four feet broad, when the wings are extended; and a foot long, from the tip of the

* Des Marchais, vol. ii. p. 208.

nose to the insertion of the tail. It resembles our bat in the form of its wings, in its manner of flying, and in its internal conformation. It differs from it in its enormous size; in its colour, which is red, like that of a fox; in its head and nose also, which resemble those of that animal, and which have induced some to call it the flying fox: it differs also in the number of its teeth; and in having a claw on the fore foot, which is wanting in ours. This formidable creature is found only in the ancient continent; particularly in Madagascar, along the coasts of Africa and Malabar, where it is usually seen about the size of a large hen. When they repose, they stick themselves to the tops of the tallest trees, and hang with their heads downward. But when they are in motion, nothing can be more formidable: they are seen in clouds, darkening the air, as well by day as by night, destroying the ripe fruits of the country, and sometimes settling upon animals, and man himself: they devour, indiscriminately, fruits, flesh, and insects, and drink the juice of the palm-tree: they are heard at night in the forests at more than two miles distance, with an horrible din; but at the approach of day, they usually begin to retire: nothing is safe from

their depredations; they deſtroy fowls and domeſtic animals, unleſs preſerved with the utmoſt care, and often faſten upon the inhabitants themſelves, attack them in the face, and inflict very terrible wounds. In ſhort, as ſome have already obſerved, the ancients ſeem to have taken their ideas of harpies from theſe fierce and voracious creatures, as they both concur in many parts of the deſcription, being equally deformed, greedy, uncleanly, and cruel.

An animal not ſo formidable, but ſtill more miſchievous than theſe, is the American Vampyre. This is leſs than the former; but more deformed, and ſtill more numerous. It is furniſhed with an horn like the rhinoceros bat; and its ears are extremely long. The other kinds generally reſort to the foreſt, and the moſt deſerted places; but theſe come into towns and cities, and, after ſun-ſet, when they begin to fly, cover the ſtreets like a canopy *. They are the common peſt both of men and animals; they effectually deſtroy the one, and often diſtreſs the other. "They are," ſays Ulloa, "the moſt expert blood-letters in the world. The inhabitants of thoſe warm latitudes being oliged, by the exceſſive heats, to

* Ulloa, vol. i. p. 58.

leave open the doors and windows of the chambers where they ſleep, the vampyres enter; and if they find any part of the body expoſed, they never fail to faſten upon it. There they continue to ſuck the blood; and it often happens that the perſon dies under the operation. They inſinuate their tooth into a vein, with all the art of the moſt experienced ſurgeon, continuing to exhauſt the body, until they are ſatiated. I have been aſſured," continues he, "by perſons of the ſtricteſt veracity, that ſuch an accident has happened to them; and that, had they not providentially awaked, their ſleep would have been their paſſage into eternity; having loſt ſo large a quantity of blood as hardly to find ſtrength to bind up the orifice. The reaſon why the puncture is not felt is, beſides the great precaution with which it is made, the gentle refreſhing agitation of the bat's wings, which contribute to encreaſe ſleep, and ſoften the pain."

The purport of this account has been confirmed by various other travellers; who all agree that this bat is poſſeſſed of a faculty of drawing the blood from perſons ſleeping; and thus often deſtroying them before they awake. But ſtill a very ſtrong difficulty remains

mains to be accounted for; the manner in which they inflict the wound. Ulloa, as has been ſeen, ſuppoſes that it is done by a ſingle tooth; but this we know to be impoſſible, ſince the animal cannot infix one tooth without all the reſt accompanying its motions; the teeth of the bat kind being pretty even, and the mouth but ſmall. Mr. Buffon therefore ſuppoſes the wound to be inflicted by the tongue; which, however, appears to me too large to inflict an unpainful wound; and even leſs qualified for that purpoſe than the teeth. Nor can the tongue, as Mr. Buffon ſeems to ſuppoſe, ſerve for the purpoſes of ſuction, ſince for this it muſt be hollow, like a ſyringe, which it is not found to be. I ſhould therefore ſuppoſe, that the animal is endowed with a ſtrong power of ſuction; and that, without inflicting any wound whatſoever, by continuing to draw, it enlarges the pores of the ſkin in ſuch a manner that the blood at length paſſes, and that more freely the longer the operation is continued; ſo that, at laſt, when the bat goes off, the blood continues to flow. In confirmation of this opinion we are told, that where beaſts have a thick ſkin, this animal cannot injure them; whereas, in horſes, mules, and aſſes, they are very liable

to be thus deſtroyed. As to the reſt, theſe animals are conſidered as one of the great peſts of South America; and often prevent the peopling of many parts of that continent: having deſtroyed at Barja, and ſeveral other places, ſuch cattle as were brought there by the miſſionaries, in order to form a ſettlement.

CHAP.

CHAP. VI.

Of Amphibious Quadrupedes.

THE gradations of Nature from one claſs of beings to another are made by imperceptible deviations. As we ſaw in the foregoing chapters quadrupedes almoſt degraded into the inſect tribe, or mounted among the inhabitants of the air, we are at preſent to obſerve their approach to fiſhes, to trace the degrees by which they become more unlike terreſtrial animals, till the ſimilitude of the fiſh prevails over that of the quadrupede.

As in oppoſite armies the two bodies are diſtinct and ſeparated from each other, while yet between them are various troops that plunder on both ſides and are friends to neither, ſo between terreſtrial and aquatic animals there are tribes that can ſcarce be referred to any rank, but lead an amphibious life between them. Sometimes in water, ſometimes on land, they ſeem fitted for each element, and yet completely adapted to neither. Wanting the agility of quadrupedes upon land, and the perſeverance of fiſhes in the deep, the variety of their powers only ſeems to diminiſh their force; and, though poſſeſſed of two different methods of living,

they are more inconveniently provided than ſuch as have but one.

All quadrupedes of this kind, though covered with hair in the uſual manner, are furniſhed with membranes between the toes, which aſſiſt their motion in the water. Their paws are broad and their legs ſhort, by which they are more completely fitted for ſwimming; for taking ſhort ſtrokes at a time, they make them oftener and with greater rapidity. Some, however, of theſe animals are more adapted to live in the water than others; but, as their power encreaſes to live in the deep, their unfitneſs for living upon land encreaſes in the ſame proportion. Some, like the otter, reſemble quadrupedes in every thing except in being in ſome meaſure web-footed; others depart ſtill further, in being, like the beaver, not only web-footed, but having the tail covered with ſcales, like thoſe of a fiſh. Others depart yet farther, as the ſeal and the morſe, by having the hind feet ſtuck to the body like fins; and others, as the lamentin, almoſt entirely reſemble fiſhes, by having no hind feet whatſoever. Such are the gradations of the amphibious tribe. They all, however, get their living in the water, either by habit or conformation; they all continue a long time under water; they all conſider that element

as their proper abode; whenever preſt by danger, they fly to the water for ſecurity; and, when upon land, appear watchful, timorous, and unwieldy.

In the firſt ſtep of the progreſſion from land to amphibious animals, we find the Otter, reſembling thoſe of the terreſtrial kind in ſhape, hair, and internal conformation; reſembling the aquatic tribes in its manner of living, and in having membranes between the toes to aſſiſt it in ſwimming. From this peculiar make of its feet, which are very ſhort, it ſwims even faſter than it runs, and can overtake fiſhes in their own element. The colour of this animal is brown; and it is ſomewhat of the ſhape of an overgrown weaſel, being long, ſlender, and ſoft ſkinned. However, if we examine its figure in detail, we ſhall find it unlike any other animal hitherto deſcribed, and of ſuch a ſhape as words can but weakly convey. Its uſual length is about two feet long, from the tip of the noſe to the inſertion of the tail; the head and noſe are broad and flat; the mouth bears ſome ſimilitude to that of a fiſh; the neck is ſhort, and equal in thickneſs to the head; the body long; the tail broad at the inſertion, but tapering off to a point at the end; the eyes are very ſmall, and placed nearer the noſe than uſual in quadru-

pedes. The legs are very ſhort, but remarkably ſtrong, broad, and muſcular. The joints are articulated ſo looſely, that the animal is capable of turning them quite back, and bringing them on a line with the body, ſo as to perform the office of fins. Each foot is furniſhed with five toes, connected by ſtrong broad webs like thoſe of water-fowl. Thus Nature, in every part, has had attention to the life of an animal whoſe food is fiſh, and whoſe haunts muſt neceſſarily be about water.

This voracious animal is never found but at the ſides of lakes and rivers, but particularly the former, for it is ſeldom fond of fiſhing in a running ſtream, for the current of the water having more power upon it than the fiſhes it purſues, if it hunts againſt the ſtream it ſwims too ſlow; and if with the ſtream, it overſhoots its prey. Howcver, when in rivers, it is always obſerved to ſwim againſt the ſtream, and to meet the fiſhes it preys upon rather than to purſue them. In lakes it deſtroys much more than it devours, and is often ſeen to ſpoil a pond in the ſpace of a few nights. But the damage they do by deſtroying fiſh is not ſo great as their tearing in pieces the nets of the fiſhers, which they infallibly do whenever they happen to be entangled. The inſtant they find themſelves caught, they

De Seve del. Js. Taylor sculp.

The Otter.

go to work with their teeth, and in a few minutes deftroy nets of a very confiderable value.

The otter has two different methods of fifhing; the one by catching its prey from the bottom upward, the other by purfuing it into fome little creek and feizing it there. In the former cafe, as this animal has longer lungs than moft other quadrupedes, upon taking in a quantity of air, it can remain for fome minutes at the bottom; and whatever fifh paffes over at that time is certainly taken; for, as the eyes of fifh are placed fo as not to fee under them, the otter attacks them off their guard from below; and, feizing them at once by the belly, drags them on fhore, where it often leaves them untouched, to continue the purfuit for hours together. The other method is chiefly practifed in lakes and ponds, where there is no current; the fifh thus taken are rather of the fmaller kind, for the great ones will never be driven out of deep water.

In this manner the otter ufually lives during the fummer, being furnifhed with a fupply much greater than its confumption; killing for its amufement, and infecting the edges of the lake with quantities of dead fifh, which it leaves there as trophies rather of its victory than its neceffities. But in winter, when the lakes are

frozen over, and the rivers pour with a rapid torrent, the otter is often greatly diſtreſſed for proviſions; and is then obliged to live upon graſs, weeds, and even the bark of trees. It then comes upon land, and, grown courageous from neceſſity, feeds upon terreſtrial animals, rats, inſects, and even ſheep themſelves. Nature, however, has given it the power of continuing a long time without food; and, although during that ſeaſon is is not rendered quite torpid, like the marmout or the dormouſe, yet it keeps much more within its retreat, which is uſually the hollow of a bank worn under by the water. There it often forms a kind of gallery, running for ſeveral yards along the edge of the water; ſo that when attacked at one end, it flies to the other, and often evades the fowler by plunging into the water at forty or fifty paces diſtance, while he expects to find it juſt before him.

We learn from Mr. Buffon that this animal, in France, couples in winter, and brings forth in the beginning of ſpring. But it is certainly different with us, for its young are never found till the latter end of ſummer; and I have frequently, when a boy, diſcovered their retreats, and purſued them at that ſeaſon. I am, therefore, more inclined to follow the account given

us of this animal by Mr. Lots, of the Academy of Stockholm, who assures us that it couples about the middle of summer, and brings forth, at the end of nine weeks, generally three or four at a time. This, as well as the generality of his other remarks on this subject, agrees so exactly with what I remember concerning it, that I will beg leave to take him for my guide, assuring the reader that, however extraordinary the account may seem, I know it to be certainly true.

In the rivers and the lakes frequented by the otter, the bottom is generally stony and uneven, with many trunks of trees, and long roots stretching underneath the water *. The shore also is hollow and scooped inward by the waves. These are the places the otter chiefly chuses for its retreat; and there is scarce a stone which does not bear the mark of its residence, as upon them its excrements are always made. It is chiefly by this mark that its lurking places are known, as well as by the quantity of dead fish that are found lying here and there upon the banks of the water. To take the old ones alive is no easy task, as they are extremely strong, and there are few dogs that will dare to encounter them. They bite with great fierce-

* Journal Etranger, Juin. 1755, p. 14.

nefs, and never let go their hold when they have once faftened. The beft way, therefore, is to fhoot them at once, as they never will be thoroughly tamed; and, if kept for the purpofes of fifhing, are always apt to take the firft opportunity of efcaping. But the young ones may be more eafily taken, and converted to very ufeful purpofes. The otter brings forth its young generally under the hollow banks, upon a bed of rufhes, flags, or fuch weeds as the place affords it in greateft quantities. I fee in the Britifh Zoology a defcription of its habitation, where that naturalift obferves, "that it burrows under ground, on the banks of fome river or lake, and always makes the entrance of its hole under water, then works up to the furface of the earth, and there makes a minute orifice for the admiffion of air; and this little air-hole is often found in the middle of fome thicket." In fome places this may be true, but I have never obferved any fuch contrivance; the retreat, indeed, was always at the edge of the water, but it was only fheltered by the impending bank, and the otter itfelf feemed to have but a fmall fhare in its formation. But, be this as it may, the young ones are always found at the edge of the water; and, if under the protection of the dam, fhe teaches

them inſtantly to plunge, like herſelf, into the deep, and eſcape among the ruſhes or weeds that fringe the ſtream. At ſuch times, therefore, it is very difficult to take them; for, though never ſo young they ſwim with great rapidity, and in ſuch a manner that no part of them is ſeen above water, except the tip of the noſe. It is only when the dam is abſent that they can be taken; and in ſome places there are dogs purpoſely trained for diſcovering their retreats. Whenever the dog comes to the place, he ſoon, by his barking, ſhews that the otter is there; which, if there be an old one, inſtantly plunges into the water, and the young all follow. But if the old one be abſent, they continue terrified, and will not venture forth but under her guidance and protection. In this manner they are ſecured and taken home alive, where they are carefully fed with ſmall fiſh and water. In proportion, however, as they gather ſtrength, they have milk mixed among their food, the quantity of their fiſh proviſion is retrenched, and that of vegetables is encreaſed, until at length they are fed wholly upon bread, which perfectly agrees with their conſtitution. The manner of training them up to hunt for fiſh requires not only aſſiduity but patience; however, their activity and uſe, when

taught, greatly repays the trouble of teaching; and, perhaps, no other animal is more beneficial to his master. The usual way is, first to learn them to fetch as dogs are instructed; but as they have not the same docility, so it requires more art and experience to teach them. It is usually performed by accustoming them to take a truss stuffed with wool, of the shape of a fish, and made of leather, in their mouths, and to drop it at the word of command; to run after it when thrown forward, and to bring it to their master. From this they proceed to real fish, which are thrown dead into the water, and which they are taught to fetch from thence. From the dead they proceed to the live, until at last the animal is perfectly instructed in the whole art of fishing. An otter thus taught is a very valuable animal, and will catch fish enough to sustain not only itself but a whole family. I have seen one of these go to a gentleman's pond at the word of command, drive up the fish into a corner, and, seizing upon the largest of the whole, bringing it off, in its mouth, to its master.

Otters are to be met with in most parts of the world, and rather differ in size and colour from each other, than in habitudes or conformation *. In North America and Carolina

* Ray.

De Sevé del. Js. Taylor sculp

The Flying Squirrel.

they are usually found white, inclining to yellow. The Brasilian otter is much larger than ours, with a roundish head, almost like a cat. The tail is shorter, being but five inches long; and the hair is soft, short, and black, except on the head, where it is of a dark brown, with a yellowish spot under the throat.

THE BEAVER.

IN all countries, as man is civilized and improved, the lower ranks of animals are repressed and degraded*. Either reduced to servitude, or treated as rebels, all their societies are dissolved, and all their united talents rendered ineffectual. Their feeble arts quickly disappear, and nothing remains but their solitary instincts, or those foreign habitudes which they receive from human education. For this reason there remain no traces of their ancient talents and industry, except in those countries where man himself is a stranger; where, unvisited by his controling power, for a long succession of ages, their little talents have had time to come to their limited perfection, and their common designs have been capable of being united.

The Beaver seems to be now the only remaining monument of brutal society. From the re-

* Buffon.

ſult of its labours, which are ſtill to be ſeen in the remote parts of America, we learn how far inſtinct can be aided by imitation. We from thence perceive to what a degree animals, without language or reaſon, can concur for their mutual advantage, and attain by numbers thoſe advantages which each, in a ſtate of ſolitude, ſeems unfitted to poſſeſs.

If we examine the beaver merely as an individual, and unconnected with others of its kind, we ſhall find many other quadrupedes to exceed it in cunning, and almoſt all in the powers of annoyance and defence. The beaver, when taken from its fellows, and kept in a ſtate of ſolitude or domeſtic tameneſs, appears to be a mild gentle creature, familiar enough, but ſomewhat dull, and even melancholy; without any violent paſſions or vehement appetites, moving but ſeldom, making no efforts to attain any good, except in gnawing the wall of its priſon, in order to regain its freedom; yet this, however, without anger or precipitation, but calm and indifferent to all about, without attachment or antipathies, neither ſeeking to offend nor deſiring to pleaſe. It appears inferior to the dog in thoſe qualities which render animals of ſervice to man; it ſeems made neither to ſerve, to command, or to have connections

with any other ſet of beings, and is only adapted for living among its kind. Its talents are entirely repreſſed in ſolitude, and are only brought out by ſociety. When alone, it has but little induſtry, few tricks, and without cunning ſufficient to guard it againſt the moſt obvious and bungling ſnares laid for it by the hunter. Far from attacking any other animal, it is ſcarce poſſeſſed of the arts of defence. Preferring flight to combat, like all wild animals, it only reſiſts when driven to an extremity, and fights only then when its ſpeed can no longer avail.

But this animal is rather more remarkable for the ſingularity of its conformation than any intellectual ſuperiorities it may be ſuppoſed, in a ſtate of ſolitude, to poſſeſs. The beaver is the only creature among quadrupedes that has a flat broad tail, covered with ſcales, which ſerves as a rudder to direct its motions in the water. It is the ſole quadrupede that has membranes between the toes on the hind feet only, and none on the fore feet, which ſupply the place of hands, as in the ſquirrel. In ſhort, it is the only animal that in its fore parts entirely reſembles a quadrupede, and in its hinder parts ſeems to approach the nature of fiſhes, by having a ſcaly tail. In other reſpects, it is about two feet long and near one foot high; it is

ſomewhat ſhaped like a rat, except the tail, which, as has been obſerved, is flat and ſcaly, ſomewhat reſembling a neat's tongue at the point. Its colour is of a light brown; the hair of two ſorts; the one longer and coarſer; the other, ſoft, fine, ſhort, and ſilky. The teeth are like thoſe of a rat or a ſquirrel, but longer and ſtronger, and admirably adapted to cutting timber or ſtripping bark, to which purpoſes they are conſtantly applied. One ſingularity more may be mentioned in its conformation; which is, that, like birds, it has but one and the ſame vent for the emiſſion of its excrements and its urine; a ſtrange peculiarity, by which, anatomiſts leave us no room to doubt of.

The beavers begin to aſſemble about the months of June and July, to form a ſociety that is to continue for the greateſt part of the year. They arrive in numbers from every ſide, and generally form a company of above two hundred. The place of meeting is commonly the place where they fix their abode, and this is always by the ſide of ſome lake or river. If it be a lake in which the waters are always upon a level, they diſpenſe with building a dam; but if it be a running ſtream, which is ſubject to floods and falls, they then ſet about building a dam, or pier, that croſſes the river, ſo that it forms

forms a dead water in that part which lies above and below. This dam, or pier, is often fourscore or an hundred feet long, and ten or twelve feet thick at the base. If we compare the greatness of the work with the powers of the architect, it will appear enormous; but the solidity with which it is built is still more astonishing than its size. The part of the river over which this dam is usually built, is where it is most shallow, and where some great tree is found growing by the side of the stream. This they pitch upon as proper for making the principal part in their building; and, although it is often thicker than a man's body, they instantly set about cutting it down. For this operation they have no other instrument but their teeth, which soon lay it level, and that also on the side they wish it to fall, which is always across the stream. They then fall about cutting off the top branches, to make it lie close and even, and serve as the principal beam of their fabric *.

This dike, or causey, is sometimes ten, and sometimes twelve feet thick at the foundation. It descends in a declivity or slope, on that side next the water, which gravitates upon the work in proportion to the height, and presses it with a prodigious force towards the earth. The

* Spectacle de la Nature.

opposite side is erected perpendicular, like our walls; and that declivity, which, at the bottom, or basis, is about twelve feet broad, diminishes towards the top, where it is no more than two feet broad, or thereabouts. The materials whereof this mole consists, are wood and clay. The beavers cut, with surprising ease, large pieces of wood, some as thick as one's arm or one's thigh, and about four, five, or six feet in length, or sometimes more, according as the slope ascends. They drive one end of these stakes into the ground, at a small distance one from the other, intermingling a few with them that are smaller and more pliant. As the water, however, would find a passage through the intervals or spaces between them, and leave the reservoir dry, they have recourse to a clay, which they know where to find, and with which they stop up all the cavities both within and without, so that the water is duly confined. They continue to raise the dike in proportion to the elevation of the water, and the plenty which they have of it. They are conscious likewise that the conveyance of their materials by land would not be so easily accomplished as by water; and therefore they take the advantage of its increase, and swim with their mortar on their tails, and their stakes between their teeth, to the places where there is most occasion for

them. If their works are, either by the force of the water, or the feet of the huntſmen, who run over them, in the leaſt damnified, the breach is inſtantly made up; every nook and corner of the habitation is reviewed, and, with the utmoſt diligence and application, perfectly repaired. But when they find the huntſmen viſit them too often, they work only in the night-time, or elſe abandon their works entirely, and ſeek out for ſome ſafer ſituation.

The dike, or mole, being thus completed, their next care is to erect their ſeveral apartments, which are either round or oval, and divided into three ſtories, one raiſed above the other: the firſt below the level of the cauſey, which is for the moſt part full of water; the other two above it. This little fabrick is built in a very firm and ſubſtantial manner, on the edge of their reſervoir, and always in ſuch diviſions or apartments as above mentioned; that in caſe of the water's increaſe, they may move up a ſtory higher, and be no ways incommoded. If they find any little iſland contiguous to their reſervoir, they fix their manſion there, which is then more ſolid, and not ſo frequently expoſed to the overflowing of the water, in which they are not able to continue for any length of time. In caſe they cannot pitch upon ſo com-

modious a ſituation, they drive piles into the earth, in order to fence and fortify their habitation againſt the wind as well as the water. They make two apertures, at the bottom, to the ſtream; one is a paſſage to their bagnio, which they always keep neat and clean; the other leads to that part of the building where every thing is conveyed, that will either ſoil or damage their upper apartments. They have a third opening or door-way, much higher, contrived for the prevention of their being ſhut up and confined, when the froſt and ſnow has cloſed the apertures of the lower floors. Sometimes they build their houſes altogether upon dry land; but then they ſink trenches five or ſix feet deep, in order to deſcend into the water when they ſee convenient. They make uſe of the ſame materials; and are equally induſtrious in the erection of their lodges, as their dikes. Their walls are perpendicular, and about two feet thick. As their teeth are more ſerviceable than ſaws, they cut off all the wood that projects beyond the wall. After this, when they have mixed up ſome clay and dry graſs together, they work it into a kind of mortar, with which, by the help of their tails, they plaiſter all their works, both within and without.

The inside is vaulted, and is large enough for the reception of eight or ten beavers. In case it rises in an oval figure, it is for the generality above twelve feet long, and eight or ten feet broad. If the number of inhabitants increase to fifteen, twenty, or thirty, the edifice is enlarged in proportion. I have been credibly informed, that four hundred beavers have been discovered to reside in one large mansion-house, divided into a vast number of apartments, that had a free communication one with another.

All these works, more especially in the northern parts, are finished in August, or September at farthest; at which time they begin to lay in their stores. During the summer, they are perfect epicures; and regale themselves every day on the choicest fruits and plants the country affords. Their provisions, indeed, in the winter season, principally consist of the wood of the birch, the plane, and some few other trees, which they steep in water, from time to time, in such quantities as are proportioned to the number of inhabitants. They cut down branches from three to ten feet in length. Those of the largest dimensions are conveyed to their magazines by a whole body of beavers; but the smallest by one only: each of them,

however, takes a different way, and has his proper walk aſſigned him, in order that no one labourer ſhould interrupt another in the proſecution of his work. Their wood-yards are larger or ſmaller, in proportion to the number in family: and, according to the obſervation of ſome curious naturaliſts, the uſual ſtock of timber, for the accommodation of ten beavers, conſiſts of about thirty feet in a ſquare ſurface, and ten in depth. Theſe logs are not thrown up in one continual pile, but laid one acroſs the other, with intervals or ſmall ſpaces between them, in order to take out, with the greater facility, but juſt ſuch a quantity as they ſhall want for their immediate conſumption, and thoſe parcels only which lie at the bottom in the water, and have been duly ſteeped. This timber is cut again into ſmall particles, and conveyed to one of their largeſt lodges, where the whole family meet, to conſume their reſpective dividends, which are made impartially, in even and equal portions. Sometimes they traverſe the woods, and regale their young with a more novel and elegant entertainment.

Such as are uſed to hunt theſe animals, know perfectly well, that green wood is much more acceptable to them, than that which is old and dry; for which reaſon they plant a conſiderable

quantity of it round their lodgments; and as they come out to partake of it, they either catch them in ſnares, or take them by ſurprize. In the winter, when the froſts are very ſevere, they ſometimes break a large hole in the ice; and when the beavers reſort thither for the benefit of a little freſh air, they either kill them with their hatchets, or cover the opening with a large ſubſtantial net. After this, they undermine and ſubvert the whole fabrick: whereupon the beavers, in hopes to make their eſcape in the uſual way, fly with the utmoſt precipitation to the water; and plunging into the aperture, fall directly into the net, and are inevitably taken.

THE SEAL.

EVERY ſtep we proceed in the deſcription of amphibious quadrupedes, we make nearer advances to the tribe of fiſhes. We firſt obſerved the otter with its feet webbed, and formed for an aquatic life; we next ſaw the beaver with the hinder parts covered with ſcales, reſembling thoſe of fiſhes; and we now come to a claſs of animals in which the ſhape and habitude of fiſhes ſtill more apparently prevail, and whoſe internal conformation attaches them very cloſely

to the water. The Seal, in general, resembles a quadrupede in some respects, and a fish in others. The head is round, like that of a man; the nose broad, like that of the otter; the teeth like those of a dog; the eyes large and sparkling; no external ears, but holes that serve for that purpose; the neck is well proportioned, and of a moderate length; but the body thickest where the neck is joined to it. From thence the animal tapers down to the tail, growing all the way smaller, like a fish. The whole body is covered with a thick bristly shining hair, which looks as if it were entirely rubbed over with oil; and thus far the quadrupede prevails over the aquatic. But it is in the feet that this animal greatly differs from all the rest of the quadrupede kind; for, though furnished with the same number of bones with other quadrupedes, yet they are so stuck on the body, and so covered with a membrane, that they more resemble fins than feet; and might be taken for such, did not the claws with which they are pointed shew their proper analogy. In the fore-feet, or rather hands, all the arm and the cubit are hid under the skin, and nothing appears but the hand from the wrist downwards; so that if we imagine a child with its arms swathed down, and nothing appearing but its hands at each side of the body,

towards the breaſt, we may have ſome idea of the formation of this animal in that part. Theſe hands are covered in a thick ſkin, which ſerves, like a fin, for ſwimming; and are diſtinguiſhed by five claws, which are long, black, and piercing. As to the hind-feet, they are ſtretched out on each ſide of the ſhort tail, covered with a hairy ſkin like the former, and both together almoſt joining at the tail; the whole looks like the broad flat tail of a fiſh; and, were it not for five claws which appear, might be conſidered as ſuch. The dimenſions of this animal are various, being found from four feet long to nine. They differ alſo in their colours; ſome being black, others ſpotted, ſome white, and many more yellow. It would, therefore, be almoſt endleſs to mention the varieties of this animal. Buffon deſcribes three; and Krantz mentions five, all different from thoſe deſcribed by the other. I might, were I fond of ſuch honours, claim the merit of being a firſt deſcriber myſelf; but, in fact, the varieties in this animal are ſo many, that, were they all deſcribed, the catalogue would be as extenſive as it would be uſeleſs and unentertaining. It is ſufficient to obſerve, that they agree in the general external characters already mentioned, and internally in two or three more, which are ſo remarkable as to deſerve peculiar attention.

It has been often remarked, that all animals are ſagacious in proportion to the ſize of their brain.* It has, in ſupport of this opinion, been alledged, that man, with reſpect to his bulk, has of all others the largeſt. In purſuance of this aſſumption, ſome erroneous ſpeculations have been formed. But, were the ſize of the brain to determine the quantity of the underſtanding, the ſeal would of all other animals be the moſt ſagacious; for it has, in proportion, the largeſt brain of any, even man himſelf not excepted. However, this animal is poſſeſſed of but very few advantages over other quadrupedes; and the ſize of its brain furniſhes it with few powers that contribute to its wiſdom or its preſervation.

This animal differs alſo in the formation of its tongue from all other quadrupedes. It is forked or ſlit at the end like that of ſerpents; but for what purpoſe it is thus ſingularly contrived we are at a loſs to know. We are much better informed with reſpect to a third ſingularity in its conformation, which is, that the *foramen ovale* in the heart is open. Thoſe who are in the leaſt acquainted with anatomy know, that the veins uniting bring their blood to the heart, which ſends it into the lungs, and from thence it returns to the heart again, to be di-

ſtributed through the whole body. Animals, however, before they are born, make no uſe of their lungs; and therefore their blood, without entering their lungs, takes a ſhorter paſſage through the very partition of the heart, from one of its chambers to the other, thus paſſing from the veins directly into thoſe veſſels that drive it through the whole frame. But the moment the animal is brought forth, the paſſage through the partition (which paſſage is called the *foramen ovale*) cloſes up, and continues cloſed for ever; for the blood then takes its longeſt courſe through the lungs to return to the other chamber of the heart again. Now the ſeal's heart reſembles that of an infant in the womb, for the *foramen ovale* never cloſes; and, although the blood of this animal commonly circulates through the lungs, yet it can circulate without their aſſiſtance, as was obſerved above, by a ſhorter way*. From hence, therefore, we ſee the manner in which this animal is adapted for continuing under water; for, being under no immediate neceſſity of breath-

* I have followed the uſual obſervations of naturaliſts with reſpect to the foramen ovale in this animal: I have many reaſons, however, to incline me to think that the foramen is not entirely open. But this is not the place for a critical enquiry of this kind.

ing, the vital motions are ſtill carried on while it continues at the bottom; ſo that it can purſue its prey in that element, and yet enjoy all the delights and advantages of ours.

The water is the ſeal's uſual habitation, and whatever fiſh it can catch its food. Though not equal in inſtinct and cunning to ſome terreſtrial animals, it is greatly ſuperior to the mute tenants of that element in which it chiefly reſides. Although it can continue for ſeveral minutes under water, yet it is not able, like fiſhes, to remain there for any length of time; and a ſeal may be drowned like any other terreſtrial animal. Thus it ſeems ſuperior in ſome reſpects to the inhabitants of both elements, and inferior in many more. Although furniſhed with legs, it is in ſome meaſure deprived of all the advantages of them *. They are ſhut up within its body, while nothing appear but the extremities of them, and theſe furniſhed with very little motion, but to ſerve them as fins in the water. The hind-feet, indeed, being turned backwards, are entirely uſeleſs upon land; ſo that when the animal is obliged to move, it drags itſelf forward like a reptile, and with an effort more painful. For this purpoſe it is obliged to uſe its fore-feet, which, though very

* Buffon.

ſhort, ſerve to give it ſuch a degree of ſwiftneſs, that a man cannot readily overtake it; and it runs towards the ſea. As it is thus aukwardly formed for going upon land, it is ſeldom found at any diſtance from the ſea-ſhore, but continues to baſk upon the rocks; and, when diſturbed, always plunges down at once to the bottom.

The ſeal is a ſocial animal, and, wherever it frequents, numbers are generally ſeen together. They are found in every climate, but in the north and icy ſeas they are particularly numerous. It is on thoſe ſhores, which are leſs inhabited than ours, and where the fiſh reſort in greater abundance, that they are ſeen by thouſands, like flocks of ſheep, baſking on the rocks, and ſuckling their young. There they keep watch like other gregarious animals; and, if an enemy appear, inſtantly plunge altogether into the water. In fine weather they more uſually employ their time in fiſhing; and generally come on ſhore in tempeſts and ſtorms. The ſeal ſeems the only animal that takes delight in theſe tremendous conflicts of nature. In the midſt of thunders and torrents, when every other creature takes refuge from the fury of the elements, the ſeals are ſeen by thouſands ſporting along the ſhore, and delighted with the univerſal diſorder. This, however, may ariſe

from the ſea being at that time too turbulent for them to reſide in; and they may then particularly come upon land, when unable to reſiſt the ſhock of their more uſual element.

As ſeals are gregarious, ſo are they alſo animals of paſſage, and perhaps the only quadrupedes that migrate from one part of the world to another. The generality of quadrupedes are contented with their native plains and foreſts, and ſeldom ſtray, except when neceſſity or fear impels them. But ſeals change their habitation; and are ſeen in vaſt multitudes directing their courſe from one continent to another *. On the northern coaſts of Greenland they are ſeen to retire in July, and to return again in September. This time it is ſuppoſed they go in purſuit of food. But they make a ſecond departure in March to caſt their young, and return in the beginning of June, young and all, in a great body together, obſerving in their route a certain fixed time and track, like birds of paſſage. When they go upon this expedition, they are ſeen in great droves, for many days together, making towards the North, taking that part of the ſea moſt free from ice, and going ſtill forward into thoſe ſeas where man cannot follow. In what manner they return,

* Krantz, vol. i. p. 129.

or by what paſſage, is utterly unknown; it is only obſerved, that when they leave the coaſts to go upon this expedition, they are all extremely fat, but on their return they come home exceſſively lean.

The females in our climate bring forth in winter, and rear their young upon ſome ſand-bank, rock, or deſolate iſland, at ſome diſtance from the continent. When they ſuckle their young, they ſit up on their hinder legs, while theſe, which are at firſt white with woolly hair, cling to the teats, of which there are four in number, near the navel *. In this manner the young continue in the place where they are brought forth, for twelve or fifteen days; after which the dam brings them down to the water, and accuſtoms them to ſwim and get their food by their own induſtry. As each litter never exceeds above three or four, ſo the animal's cares are not much divided, and the education of her little ones is ſoon completed. In fact, the young are particularly docile; they underſtand the mother's voice among the numerous bleatings of the reſt of the old ones; they mutually aſſiſt each other in danger, and are perfectly obedient to her call. Thus early accuſtomed to ſubjection, they continue to live in ſociety,

* Coeunt in littore reſupinata femina. LIN. SYST.

hunt and herd together, and have a variety of tones, by which they encourage to purſue, or warn each other of danger. Some compare their voices to the bleating of a flock of ſheep, interrupted now and then by the barking of angry dogs, and ſometimes the ſhriller notes of a cat *. All along the ſhore, each has its own peculiar rock, of which it takes poſſeſſion, and where it ſleeps when fatigued with fiſhing, uninterrupted by any of the reſt. The only ſeaſon when their ſocial ſpirit ſeems to forſake them, is that when they feel the influences of natural deſire. They then fight moſt deſperately; and the male that is victorious, keeps all the females to himſelf. Their combats on theſe occaſions are managed with great obſtinacy, and yet great juſtice: two are never ſeen to fall upon one together; but each has its antagoniſt, and all fight an equal battle, till one alone becomes victorious.

We are not certainly informed how long the females continue pregnant; but if we may judge from the time which intervenes between their departure from the Greenland coaſts and their return, they cannot go above ſeven or eight months at the fartheſt. How long this animal lives is alſo unknown: a gentleman whom I

* Linnæi Syſt.

knew

knew in Ireland, kept two of them, which he had taken very young, in his houſe for ten years; and they appeared to have the marks of age at the time I ſaw them, for they were grown grey about the muzzle; and it is very probable they did not live many years longer. In their natural ſtate the old ones are ſeen very fat and torpid, ſeparated from the reſt, and, as it ſhould ſeem, incapable of procreation.

As their chief food is fiſh, ſo they are very expert at purſuing and catching it. In thoſe places where the herrings are ſeen in ſhoals, the ſeals frequent and deſtroy them by thouſands. When the herring retires, the ſeal is then obliged to hunt after fiſh that are ſtronger, and more capable of evading the purſuit*: however, they are very ſwift in deep waters, dive with great rapidity, and, while the ſpectator eyes the ſpot at which they diſappear, they are ſeen to emerge at above an hundred yards diſtance. The weaker fiſhes, therefore, have no other means to eſcape their tyranny, but by darting into the ſhallows. The ſeal has been ſeen to purſue a mullet, which is a ſwift ſwimmer, and to turn it to and fro, in deep water, as an hound does an hare on land. The mullet has been ſeen trying every art of evaſion; and

* Britiſh Zoology, vol. i. p. 75.

at laſt ſwimming into ſhallow water, in hopes of eſcaping. There, however, the ſeal followed; ſo that the little animal had no other way left to eſcape, but to throw itſelf on one ſide, by which means it darted into ſhoaler water than it could have ſwam in with the belly undermoſt; and thus at laſt it got free.

As they are thus the tyrants of the element in which they chiefly reſide, ſo they are not very fearful even upon land, except on thoſe ſhores which are thickly inhabited, and from whence they have been frequently purſued. Along the deſert coaſts where they are ſeldom interrupted by man, they ſeem to be very bold and courageous; if attacked with ſtones, like dogs, they bite ſuch as are thrown againſt them; if encountered more cloſely, they make a deſperate reſiſtance, and, while they have any life, attempt to annoy their enemy. Some have been known, even while they were ſkinning, to turn round and ſeize their butchers; but they are generally diſpatched by a ſtunning blow on the noſe. They uſually ſleep ſoundly where not frequently diſturbed; and that is the time when the hunters ſurpriſe them. The Europeans who go into the Greenland ſeas upon the whale-fiſhery, ſurround them with nets, and knock them on the head; but the

Greenlanders, who are unprovided with ſo expenſive an apparatus, deſtroy them in a different manner. One of theſe little men paddles away in his boat, and when he ſees a ſeal aſleep on the ſide of a rock, darts his lance, and that with ſuch unerring aim, that it never fails to bury its point in the animal's ſide. The ſeal, feeling itſelf wounded, inſtantly plunges from the top of the rock, lance and all, into the ſea, and dives to the bottom; but the lance has a bladder tied to one end, which keeps buoyant, and reſiſts the animal's deſcent; ſo that every time the ſeal riſes to the top of the water, the Greenlander ſtrikes it with his oar, until he at laſt diſpatches it. But, in our climate, the ſeals are much more wary, and ſeldom ſuffer the hunter to come near them. They are often ſeen upon the rocks of the Corniſh coaſt, baſking in the ſun, or upon the inacceſſible cliffs, left dry by the tide. There they continue, extremely watchful, and never ſleep long without moving; ſeldom longer than a minute; for then they raiſe their heads, and if they ſee no danger, they lie down again, raiſing and reclining their heads alternately, at intervals of about a minute each. The only method, therefore, that can be taken, is to ſhoot them: if they chance to eſcape, they haſten towards the

deep, flinging ſtones and dirt behind them as they ſcramble along, and at the ſame time expreſſing their pain or their fears, by the moſt diſtreſsful cry; if they happen to be overtaken, they make a vigorous reſiſtance with their feet and teeth, till they are killed.

The ſeal is taken for the ſake of its ſkin, and for the oil its fat yields. The former ſells for about four ſhillings; and, when dreſſed, is very uſeful in covering trunks, making waiſtcoats, ſhot-pouches, and ſeveral other conveniencies. The fleſh of this animal formerly found place at the tables of the great. At a feaſt provided by Archbiſhop Nevill, for Edward the Fourth, there were twelve ſeals and porpoiſes provided, among other extraordinary rarities.

As a variety of this animal, we may mention the Sea Lion, deſcribed in Anſon's Voyages. This is much larger than any of the former; being from eleven to eighteen feet long. It is ſo fat that, when the ſkin is taken off, the blubber lies a foot thick all round the body. It ſeems to differ from the ordinary ſeal, not only in its ſize, but alſo in its food; for it is often ſeen to graze along the ſhore, and to feed upon the long graſs that grows up along the edges of brooks. Its cry is very various, ſometimes

Elias Martin sc.

The Morse.

resembling the neighing of a horse, and sometimes the grunting of the hog. It may be regarded as the largest of the seal family.

THE MORSE.

THE Morse is an animal of the seal kind; but differing from the rest, in a very particular formation of the teeth, having too large tusks growing from the upper jaw, shaped like those of an elephant, but directed downwards; whereas, in the elephant, they grow upright, like horns; it also wants the cutting-teeth, both above and below: as to the rest, it pretty much resembles a seal, except that it is much larger, being from twelve to sixteen feet long. The morses are also generally seen to frequent the same places that seals are known to reside in; they have the same habitudes, the same advantages, and the same imperfections. There are, however, fewer varieties of the morse than the seal; and they are rarely found, except in the frozen regions near the pole. They were formerly more numerous than at present; and the savage natives of the coasts of Greenland destroyed them in much greater quantities before those seas were visited by European ships upon the whale-fishery, than now. Whether

theſe animals have been ſince actually thinned by the fiſhers, or have removed to ſome more diſtant and unfrequented ſhores, is not known; but certain it is, that the Greenlanders, who once had plenty, are now obliged to toil more aſſiduouſly for ſubſiſtence; and as the quantity of their proviſions decreaſe, for they live moſtly upon ſeals, the numbers of that poor people are every day diminiſhing. As to the teeth, they are generally from two to three feet long; and the ivory is much more eſteemed than that of the elephant, being whiter and harder. The fiſhers have been known formerly to kill three or four hundred at once; and along thoſe ſhores where they chiefly frequented, their bones are ſtill ſeen lying in prodigious quantities. In this manner a ſupply of proviſions, which would have ſupported the Greenland nation for ages, has been, in a few years, ſacrificed to thoſe who did not uſe them, but who ſought them for the purpoſes of avarice and luxury!

THE MANATI.

WE come, in the laſt place, to an animal that terminates the boundary between quadrupedes and fiſhes. Inſtead of a creature preying among the deeps, and retiring upon land for

repoſe or refreſhment, we have here an animal that never leaves the water, and is enabled to live only there. It cannot be called a quadrupede, as it has but two legs only; nor can it be called a fiſh, as it is covered with hair. In ſhort, it forms the link that unites thoſe two great tribes to each other; and may be indiſcriminately called the laſt of beaſts, or the firſt of fiſhes.

We have ſeen the ſeal approaching nearly to the aquatic tribes, by having its hind legs thrown back on each ſide of the tail, and forming ſomething that reſembled the tail of a fiſh; but upon examining the ſkeleton of that animal, its title to the rank of a quadrupede was obſerved plainly to appear, having all the bones of the hinder legs and feet as complete as any other animal whatſoever.

But we are now come to a creature that not only wants the external appearance of hinder legs, but, when examined internally, will be found to want them altogether. The Manati is ſomewhat ſhaped in the head and the body like the ſeal; it has alſo the fore legs or hands pretty much in the ſame manner, ſhort and webbed, but with four claws only: theſe alſo are ſhorter in proportion than in the former animal, and placed nearer the head; ſo that

they can ſcarcely aſſiſt its motions upon land. But it is in the hinder parts that it chiefly differs from all others of the ſeal kind; for the tail is perfectly that of a fiſh, being ſpread out broad like a fan, and wanting even the veſtiges of thoſe bones which make the legs and feet in others of its kind. The largeſt of theſe are about twenty-ſix feet in length; the ſkin is blackiſh, very tough and hard; when cut, as black as ebony; and there are a few hairs ſcattered, like briſtles, of about an inch long. The eyes are very ſmall, in proportion to the animal's head; and the ear-holes, for it has no external ears, are ſo narrow as ſcarce to admit a pin's head. The tongue is ſo ſhort, that ſome have pretended it has none at all; and the teeth are compoſed only of two ſolid white bones, running the whole length of both jaws, and formed merely for chewing, and not tearing its vegetable food. The female has breaſts placed forward, like thoſe of a woman; and ſhe brings forth but one at a time: this ſhe holds with her paws to her boſom; there it ſticks, and accompanies her wherever ſhe goes.

This animal can ſcarcely be called amphibious, as it never entirely leaves the water, only advancing the head out of the ſtream, to

reach the graſs on the river ſides. Its food is entirely upon vegetables; and, therefore, it is never found far in the open ſea, but chiefly in the large rivers of South America; and often above two thouſand miles from the ocean. It is alſo found in the ſeas near Kamſkatka, and feeds upon the weeds that grow near the ſhore. There are likewiſe level greens at the bottom of ſome of the Indian bays, and there the manatees are harmleſsly ſeen grazing among turtles and other cruſtaceous fiſhes, neither giving nor fearing any diſturbance. Theſe animals, when unmoleſted, keep together in large companies, and ſurround their young ones *. They bring forth moſt commonly in autumn; and it is ſuppoſed they go with young eighteen months, for the time of generation is in ſpring.

The manati has no voice nor cry, for the only noiſe it makes, is by fetching its breath. Its internal parts ſomewhat reſemble thoſe of a horſe; its inteſtines being longer, in proportion, than thoſe of any other creature, the horſe only excepted.

The fat of the manati, which lies under the ſkin, when expoſed to the ſun, has a fine ſmell and taſte, and far exceeds the fat of any ſea

* Acta Petropolitana.

animal; it has this peculiar property, that the heat of the ſun will not ſpoil it, nor make it grow rancid; its taſte is like the oil of ſweet almonds; and it will ſerve very well, in all caſes, inſtead of butter: any quantity may be taken inwardly with ſafety, for it has no other effect than keeping the body open. The fat of the tail is of a harder conſiſtence; and, when boiled, is more delicate than the former. The lean is like beef, but more red; and may be kept a long while, in the hotteſt days, without tainting. It takes up a long time in boiling; and, when done, eats like beef. The fat of the young one is like pork; the lean is like veal; and, upon the whole, it is very probable that this animal's fleſh ſomewhat reſembles that of turtle; ſince they are fed in the ſame element, and upon the very ſame food. The turtle is a delicacy well known among us: our luxuries are not as yet ſufficiently heightened to introduce the manati; which, if it could be brought over, might ſingly ſuffice for a whole corporation.

CHAP. VII.

Of Animals of the Monkey Kind.

QUADRUPEDES may be confidered as a numerous groupe, terminated on every fide by fome that but in part deferve the name. On one quarter we fee a tribe covered with quills, or furnifhed with wings, that lift them among the inhabitants of air; on another, we behold a diverfity cloathed with fcales and fhells, to rank with infects; and ftill, on a third, we fee them defcending into the waters, to live among the mute tenants of that element. We now come to a numerous tribe, that, leaving the brute creation, feem to make approaches even to humanity; that bear an aukward refemblance of the human form, and difcover fome faint efforts at intellectual fagacity.

Animals of the monkey clafs are furnifhed with hands inftead of paws; their ears, eyes, eye-lids, lips, and breafts, are like thofe of mankind; their internal conformation alfo bears fome diftant likenefs; and the whole offers a picture that may well mortify the pride of fuch as make their perfons alone the principal object of their admiration.

Thefe approaches, however, are gradual; and

ſome bear the marks of this our boaſted form, more ſtrongly than others.

In the Ape kind we ſee the whole external machine ſtrongly impreſſed with the human likeneſs, and capable of the ſame exertions: theſe walk upright, want a tail, have fleſhy poſteriors, have calves to their legs, and feet nearly like ours.

In the Baboon kind we perceive a more diſtant approach to the human form; the quadrupede mixing in every part of the animal's figure: theſe generally go upon all fours; but ſome, when upright, are as tall as a man; they have ſhort tails, long ſnouts, and are poſſeſſed of brutal fierceneſs.

The Monkey kind are removed a ſtep further: theſe are much leſs than the former, with tails as long, or longer than their bodies, and flattiſh faces.

Laſtly, the Maki and Opoſſum kind, ſeem to loſe all reſemblance of the human figure, except in having hands; their noſes are lengthened out, like thoſe of quadrupedes, and every part of their bodies totally different from the human; however, as they graſp their food, or other objects, with one hand, which quadrupedes cannot do, this ſingle ſimilitude gives them an air of ſagacity, to which they have ſcarce any other pretenſions.

From this ſlight ſurvey it may be eaſily ſeen

that one general description will not serve for animals so very different from each other: nevertheless, it would be fatiguing to the last degree, as their varieties are so numerous, and their differences so small, to go through a particular description of each. In this case it will be best to give an history of the foremost in each class; at the same time marking the distinctions in every species. By this we shall avoid a tedious repetition of similar characters, and consider the manners and the oddities of this phantastic tribe in general points of view; where we shall perceive how nearly they approach to the human figure, and how little they benefit by the approximation.

The foremost of the Ape kind is the Ourang Outang, or Wild Man of the Woods. This name seems to have been given to various animals, agreeing in one common character of walking upright, but coming from different countries, and of very different proportions and powers. The Troglodyte of Bontius, the Drill of Purchas, and the Pygmy of Tyson, have all received this general name; and have been ranked, by some naturalists, under one general description. If we read the accounts of many remote travellers, under this name we are presented with a formidable animal, from

ſix to eight feet high; if we examine the books of ſuch as have deſcribed it nearer home, we find it a pigmy not above three. In this diverſity we muſt be content to blend their various deſcriptions into one general account; obſerving, at the ſame time, that we have no reaſon to doubt any of their relations, although we are puzzled which to follow.

The Ouran Outang, which, of all other animals, moſt nearly approaches to the human race, is ſeen of different ſizes, from three to ſeven feet high. In general, however, its ſtature is leſs than that of a man; but its ſtrength and agility much greater. Travellers who have ſeen various kinds of theſe animals in their native ſolitudes, give us ſurpriſing relations of their force, their ſwiftneſs, their addreſs, and their ferocity. Naturaliſts who have obſerved their form and manners at home, have been as much ſtruck with their patient, pliant, imitative diſpoſitions; with their appearance and conformation ſo nearly human. Of the ſmalleſt ſort of theſe animals we have had ſeveral, at different times, brought into this country, all nearly alike; but that obſerved by Dr. Tyſon, is the beſt known, having been deſcribed with the greateſt exactneſs.

The animal which was deſcribed by that

learned phyfician, was brought from Angola in Africa, where it had been taken in the internal parts of the country, in company with a female of the fame kind, that died by the way. The body was covered with hair, which was of a coal black colour, more refembling human hair than that of brutes. It bore a ftill ftronger fimilitude in its different lengths; for in thofe places where it is longeft on the human fpecies, it was alfo longeft in this; as on the head, the upper lip, the chin, and the pubes. The face was like that of a man, the forehead larger, and the head round. The upper and lower jaw were not fo prominent as in monkies; but flat, like thofe of a man. The ears were like thofe of a man in moft refpects; and the teeth had more refemblance to the human, than thofe of any other creature. The bending of the arms and legs were juft the fame as in a man; and, in fhort, the animal, at firft view, prefented a figure entirely human.

In order to difcover its differences, it was neceffary to make a clofer furvey; and then the imperfections of its form began to appear. The firft obvious difference was in the flatnefs of the nofe; the next in the lownefs of the forehead, and the wanting the prominence of the chin. The ears were proportionably too large; the

eyes too cloſe to each other; and the interval between the noſe and mouth too great. The body and limbs differed, in the thighs being too ſhort, and the arms too long; in the thumb being too little, and the palm of the hand too narrow. The feet alſo were rather more like hands than feet; and the animal, if we may judge from the figure, bent too much upon its haunches.

When this creature was examined anatomically, a ſurpriſing ſimilitude was ſeen to prevail in its internal conformation. It differed from man in the number of its ribs, having thirteen; whereas, in man, there are but twelve. The vertebræ of the neck alſo were ſhorter, the bones of the pelvis narrower, the orbits of the eyes were deeper, the kidnies, were rounder, the urinary and gall bladders were longer and ſmaller, and the ureters of a different figure. Such were the principal diſtinctions between the internal parts of this animal and thoſe of man; in almoſt every thing elſe they were entirely and exactly the ſame, and diſcovered an aſtoniſhing congruity. Indeed, many parts were ſo much alike in conformation, that it might have excited wonder how they were productive of ſuch few advantages. The tongue, and all the organs of the voice, were

were the ſame, and yet the animal was dumb; the brain was formed in the ſame manner with that of man, and yet the creature wanted reaſon: an evident proof (as Mr. Buffon finely obſerves) that no diſpoſition of matter will give mind; and that the body, how nicely ſoever formed, is formed in vain, when there is not infuſed a ſoul to direct its operations.

Having thus taken a comparative view of this creature with man, what follows may be neceſſary to complete the general deſcription. This animal was very hairy all behind, from the head downwards; and the hair ſo thick, that it covered the ſkin almoſt from being ſeen: but in all parts before, the hair was much thinner, the ſkin every where appeared; and in ſome places it was almoſt bare. When it went on all fours, as it was ſometimes ſeen to do, it appeared all hairy; when it went erect, it appeared before leſs hairy, and more like a man. Its hair, which in this particular animal was black, much more reſembled that of men than the fur of brutes; for, in the latter, beſides their long hair, there is uſually a finer and ſhorter intermixed; but in the ouran outang it was all of a kind; only about the pubes the hair was greyiſh, ſeemed longer, and ſomewhat different; as alſo on the upper lip and chin,

where it was greyiſh, like the hair of a beard. The face, hands, and ſoles of the feet, were without hair; and ſo was moſt part of the forehead: but down the ſides of the face the hair was thick, it being there about an inch and an half long, which exceeded that on any other part of the body. In the palms of its hands were remarkable thoſe lines which are uſually taken notice of in palmiſtry; and, at the tips of the fingers, thoſe ſpiral lines obſerved in man. The palms of the hands were as long as the ſoles of the feet; and the toes upon theſe were as long as the fingers; the middle toe was the longeſt of all, and the whole foot differed from the human. The hinder feet being thus formed as hands, the animal often uſed them as ſuch; and, on the contrary, now and then made uſe of its hands inſtead of feet. The breaſts appeared ſmall and ſhrivelled, but exactly like thoſe of a man: the naval alſo appeared very fair, and in exact diſpoſition, being neither harder nor more prominent than what is uſually ſeen in children. Such is the deſcription of this extraordinary creature; to which little has been added by ſucceeding obſervers, except that the colour of the hair is often found to vary: in that deſcribed by Edwards it was of a reddiſh brown.

From a picture so like that of the human species, we are naturally led to expect a corresponding mind; and it is certain, that such of these animals as have been shewn in Europe, have discovered a degree of imitation beyond what any quadrupede can arrive at.

That of Tyson was a gentle, fond, harmless creature. In its passage to England, those that it knew on ship-board it would embrace with the greatest tenderness, opening their bosoms, and clasping its hands about them. Monkies of a lower species it held in utter aversion; it would always avoid the place where they were kept in the same vessel; and seemed to consider itself as a creature of higher extraction. After it was taken, and a little used to wear cloaths, it grew very fond of them; a part it would put on without any help, and the rest it would carry in its hands to some of the company, for their assistance. It would lie in a bed, place its head on the pillow, and pull the cloaths upwards, as a man would do.

That which was seen by Edwards, and described by Buffon, shewed even a superior degree of sagacity. It walked, like all of its kind, upon two legs, even though it carried burthens. Its air was melancholy, and its deportment grave. Unlike the baboon or monkey, whose

motions are violent and appetites capricious, who are fond of miſchief and obedient only from fear, this animal was ſlow in its motions, and a look was ſufficient to keep it in awe. I have ſeen it, ſays Mr. Buffon, give its hand to ſhow the company to the door: I have ſeen it ſit at table, unfold its napkin, wipe its lips, make uſe of the ſpoon and the fork to carry the victuals to its mouth, pour out its drink into a glaſs, touch glaſſes when invited, take a cup and ſaucer and lay them on the table, put in ſugar, pour out its tea, leave it to cool before drinking; and all this without any other inſtigation than the ſigns or the command of its maſter, and often of its own accord. It was gentle and inoffenſive; it even approached ſtrangers with reſpect, and came rather to receive careſſes than to offer injuries. It was particularly fond of ſugared comfits, which every body was ready to give it; and, as it had a defluxion upon the breaſt, ſo much ſugar contributed to encreaſe the diſorder and ſhorten its life. It continued at Paris but one ſummer, and died in London. It ate indiſcriminately of all things, but it preferred dry and ripe fruits to all other aliments. It would drink wine, but in ſmall quantities, and gladly left it for milk, tea, or any other ſweet liquor.

Such these animals appeared when brought into Europe. However, many of their extraordinary habits were probably the result of education, and we are not told how long the instructions they received for this purpose were continued. But we learn from another account that they take but a very short time to come to a great degree of imitative perfection. Mr. L. Brosse bought two young ones, that were but a year old, from a Negroe; and these at that early age discovered an astonishing power of imitation *. They even then sat at the table like men, ate of every thing without distinction, [illegible]ade use of their knife, spoon, and fork, b[illegible]t their meat and help themselves. They dra[illegible]k wine and other liquors. When carried o[illegible]ard, they had signs for the cabbin boys expressive of their wants; and whenever these neglected attending upon them as they desired, they instantly flew into a passion, seized them by the arm, bit them, and kept them down. The male was sea-sick, and required attendance like an human creature; he was even twice bled it the arm; and every time afterwards when he found himself out of order, he shewed his arm, as desirous of being relieved by bleeding.

* As quoted by Buffon, vol. xxviii. p. 77.

Pyrard relates, that in the province of Sierra Leona, in Africa, there are a kind of apes, called Baris, which are ſtrong and muſcular, and which, if properly inſtructed when young, ſerve as very uſeful domeſtics. They uſually walk upright; they pound at a mortar; they go to the river to fetch water, this they carry back in a little pitcher, on their heads; but if care be not taken to receive the pitcher at their return, they let it fall to the ground, and then, ſeeing it broken, they begin to lament and cry for their loſs. Le Comte's account is much to the ſame purpoſe of an ape, which he ſaw in the Streight of Molucca. "It walked [illegible] its two hind feet, which it bent a litt[illegible]g that had been taught to dance. I[illegible] made uſe of its hands and arms as we do. [illegible] viſage was not much more diſagreeable than that of an Hottentot; but the body was all over covered with a woolly hair of different colours. As to the reſt, it cried like a child; all its outward actions were ſo like the human, and the paſſions ſo lively and ſignificant, that dumb men could ſcarce better expreſs their conceptions and deſires. It had alſo that expreſſion of paſſion or joy which we often ſee in children, ſtamping with its feet, and ſtriking them againſt the ground, to ſhew its ſpight, or when refuſed

any thing it paſſionately longed for. Although theſe animals," continues he, "are very big, for that I ſaw was four feet high, their nimbleneſs is incredible. It is a pleaſure beyond expreſſion to ſee them run up the tackling of a ſhip, where they ſometimes play as if they had a knack of vaulting peculiar to themſelves, or as if they had been paid, like our rope-dancers, to divert the company. Sometimes, ſuſpended by one arm, they poize themſelves, and then turn all of a ſudden round about a rope, with as much quickneſs as a wheel, or a ſling put into motion. Sometimes holding the rope ſucceſſively with their long fingers, and, letting their whole body fall into the air, they run full ſpeed from one end to the other, and come back again with the ſame ſwiftneſs. There is no poſture that they imitate, nor motion but they perform. Bending themſelves like a bow, rolling like a bowl, hanging by the hands, feet, and teeth, according to the different fancies with which their capricious imagination ſupplies them. But what is ſtill more amazing than all is, their agility to fling themſelves from one rope to another, though at thirty, forty, and fifty feet diſtance."

Such are the habitudes and the powers of the ſmaller claſs of theſe extraordinary creatures;

but we are presented with a very different picture in those of a larger stature and more muscular form. The little animals we have been describing, which are seldom found above four feet high, seem to partake of the nature of dwarfs among the human species, being gentle, assiduous, and playful, rather fitted to amuse than terrify. But the gigantic races of the Ourang Outang, seen and described by travellers, are truly formidable; and in the gloomy forests, where they are only found, seem to hold undisputed dominion. Many of these are as tall or taller than a man; active, strong and intrepid, cunning, lascivious, and cruel. This redo[illegible]ble rival of mankind is found in m[illegible] of Africa, in the East-Indies, in Madag[illegible]car, and in Borneo*. In the last of [illegible] places, the people of quality course him as w[illegible] the stag; and this sort of hunting is one of the favourite amusements of the king himself. This creature is extremely swift of foot, endowed with extraordinary strength, and runs with prodigious celerity. His skin is all hairy, his eyes sunk in his head, his countenance stern, his face tanned, and all his lineaments, though exactly human, harsh and blackened by the sun. In Africa this creature is even still more formidable. Battel

* Le Compte's History of China.

calls him the Pongo, and aſſures us that in all his proportions he reſembles a man, except that he is much larger, even to a gigantic ſtate. His face reſembles that of a man, the eyes deep ſunk in the head, the hair on each ſide extremely long, the viſage naked and without hair, as alſo the ears and the hands. The body is lightly covered, and ſcarcely differing from that of a man, except that there are no calves to the legs. Still, however, the animal is ſeen to walk upon his hinder legs, and in an erect poſture. He ſleeps under trees, and builds himſelf an hut, which ſerves to protect him a[illegible]ſt the ſun and the rains of the tropical cli[illegible] of which he is a native. He lives only upon fr[illegible]its, [illegible] is no way carnivorous. He cannot ſp[illegible], although furniſhed with a greater inſtinct than any other animal of the brute creation. When the Negroes make a fire in the woods, this animal comes near and warms himſelf by the blaze. However, he has not ſkill enough to keep the flame alive by feeding it with fuel. They go together in companies; and if they happen to meet one of the human ſpecies, remote from ſuccour, they ſhew him no mercy. They even attack the elephant, which they beat with their clubs, and oblige to leave that part of the foreſt which they claim

as their own. It is impoſſible to take any of theſe dreadful creatures alive, for they are ſo ſtrong that ten men would no be a match for but one of them. None of this kind, therefore, are taken except when very young, and theſe but rarely, when the female happens to leave them behind, for in general they keep clung to the breaſt, and adhere both with legs and arms. From the ſame traveller we learn, that when one of theſe animals dies, the reſt cover the body with a quantity of leaves and branches. They ſometimes alſo ſhew mercy to the human kind. A Negroe boy, that was taken by one of theſe, and carried into the woods, continued there a whole year, without receiving any injury *. From another traveller we learn, that theſe animals often attempt to ſurprize the female Negroes as they go into the woods, and frequently keep them againſt their wills for the pleaſure of their company, feeding them very plentifully all the time. He aſſures us that he knew a woman of Loango that had lived among theſe animals for three years. They grow from ſix to ſeven feet high, and are of unequalled ſtrength. They build ſheds, and make uſe of clubs for their defence. Their faces are broad, their noſes flat, their ears without a tip,

* Le Broſſe, as quoted by Buffon, vol. xxviii. p. 70.

their ſkins are more bright than that of a Mullatoe, and they are covered on many parts of the body with long and tawny coloured hair. Their belly is large, their heels flat, and yet riſing behind. They ſometimes walk upright, and ſometimes upon all fours, when they are fantaſtically diſpoſed.

From this deſcription of the Ouran Outang, we perceive at what a diſtance the firſt animal of the brute creation is placed from the very loweſt of the human ſpecies. Even in countries peopled with ſavages, this creature is conſidered as a beaſt; and in thoſe very places where we might ſuppoſe the ſmalleſt difference between them and mankind, the inhabitants hold it in the greateſt contempt and deteſtation. In Borneo, where this animal has been ſaid to come to its greateſt perfection, the natives hunt it in the ſame manner as they purſue the elephant or the lion, while its reſemblance to the human form procures it neither pity nor protection. The gradations of Nature in the other parts of nature are minute and inſenſible; in the paſſage from quadrupedes to fiſhes we can ſcarce tell where the quadrupede ends and the fiſh begins; in the deſcent from beaſts to inſects we can hardly diſtinguiſh the ſteps of the progreſſion; but in the aſcent from brutes to man, the line is ſtrongly drawn, well

marked, and unpaſſable. It is in vain that the Ouran Outang reſembles man in form, or imitates many of his actions; he ſtill continues a wretched, helpleſs creature, pent up in the moſt gloomy part of the foreſt, and, with regard to the proviſion for his own happineſs, inferior even to the elephant or the beaver in ſagacity. To us, indeed, this animal ſeems much wiſer than it really is. As we have long been uſed to meaſure the ſagacity of all actions by their ſimilitude to our own, and not their fitneſs to the animal's way of living, we are pleaſed with the imitations of the ape, even though we know they are far from contributing to the convenience of its ſituation. An ape, or a quadrupede, when under the trammels of human education, may be an admirable object for human curioſity, but is very little advanced by all its learning in the road to its own felicity. On the contrary, I have never ſeen any of theſe long inſtructed animals that did not, by their melancholy air, appear ſenſible of the wretchedneſs of their ſituation. Its marks of ſeeming ſagacity were merely relative to us and not to the animal; and all its boaſted wiſdom was merely of our own making.

There is, in fact, another circumſtance relative to this animal which ought not to be

concealed. I have many reaſons to believe that the moſt perfect of the kind are prone, like the reſt of the quadrupede creation, and only owe their erect attitude to human education. Almoſt all the travellers who ſpeak of them mention their going ſometimes upon all fours, and ſometimes erect. As their chief reſidence is among trees, they are without doubt uſually ſeen erect while they are climbing; but it is more than probable that their efforts to eſcape upon the ground are by running upon the hands and feet together. Schouten, who mentions their education, tells us that they are taken in traps, and taught in the beginning to walk upon their hind legs; which certainly implies that in a ſtate of nature they run upon all fours. Add to this, that, when we examine the palms of their hands and the ſoals of their feet, we find both equally callous and beaten; a certain proof that both have been equally uſed. In thoſe hot countries, where the apes are known to reſide, the ſoals of the Negroes feet, who go bare-foot, are covered with a ſkin above an inch thick; while their hands are as ſoft as thoſe of an European. Did the apes walk in the ſame manner, the ſame exerciſe would have furniſhed them with ſimilar advantages, which is not the caſe. Beſides all this, I have been aſſured by a very

credible traveller, that theſe animals naturally run in the woods upon all fours; and when they are taken, their hands are tied behind them, to teach them to walk upright. This attitude they learn after ſome time; and, thus inſtructed, they are ſent into Europe to aſtoniſh the ſpeculative with their near approaches to humanity, while it is never conſidered how much is natural, and how much has been acquired in the ſavage ſchools of Benin and Angola.

The animal next to theſe, and to be placed in the ſame claſs, is the Ape, properly ſo called, or the Pithekos of the ancients. This is much leſs than the former, being not above a foot and an half high, but walks erect, is without a tail, and is eaſily tamed.

Of this kind alſo is the Gibbon, ſo called by Buffon, or the Long Armed Ape, which is a very extraordinary and remarkable creature. It is of different ſizes, being from four feet to two feet high. It walks erect, is without a tail, has a face reſembling that of a man, with a circle of buſhy hair all round the viſage; its eyes are large and ſunk in its head; its face tanned and its ears exactly proportioned. But that in which it chiefly differs from all other of the monkey tribe is the extraordinary length of its arms, which, when the animal

ſtands erect, are long enough to reach the ground; ſo that it can walk upon all fours and yet keep its erect poſture at the ſame time. This animal, next to the Ouran Outang and the Ape, moſt nearly reſembles mankind, not only in form, but in gentle manners and tractable diſpoſition. It is a native of the Eaſt-Indies, and particularly found along the coaſts of Coromandel.

The laſt of the ape kind is the Cynocephalus, or the Magot of Buffon. This animal wants a tail, like the former, although there is a ſmall protuberance at that part, which yet is rather formed by the ſkin than the bone. It differs alſo in having a large callous red rump. The face is prominent, and approaches more to that of quadrupedes than of man. The body is covered with a browniſh hair, and yellow on the belly. It is about three feet and an half, or four feet high, and is a native of moſt parts of Africa and the Eaſt. As it recedes from man in its form, ſo alſo it appears different in its diſpoſitions, being ſullen, vicious, and untractable *.

* Omnes femellæ hujuſce et precedentium, ut et fere ſequentium ſpecierum menſtruali patiuntur fluxu ſicut in feminis.

THE BABOON.

DESCENDING from the more perfect of the monkey kinds, we come to the baboon and its varieties, a large, fierce, and formidable race, that, mixing the figure of the man and the quadrupede in their conformation, seem to possess only the defects of both; the petulance of the one, and the ferocity of the other. These animals have a short tail; a prominent face; with canine teeth, larger than those of men, and callosities on the rump *. In man the physiognomy may deceive, and the figure of body does not always lead to the qualities of the mind; but in animals we may always judge of their dispositions by their looks, and form a just conjecture of their internal habits from their external form. If we compare the nature of the ape and baboon by this easy rule, we shall at once be led to pronounce that they greatly differ in their dispositions, and that the latter are infinitely more fierce, savage, and malicious than the former. The ouran outang, that so nearly resembles man in its figure, approaches also nearest in the gentleness of its manners and the pliancy of its temper. The cynocephalus, that of all other apes is most unlike man in form,

* Buffon, vol. xxviii. p. 183.

form, and approaches nearer the dog in face, reſembles alſo the brute in nature, being wild, reſtleſs, and impelled by a fretful impetuoſity. But the baboon, who is ſtill more remote, and reſembles man only in having hands, who, from having a tail, a prominent face, and ſharp claws, approaches more nearly to the ſavage tribe, is every way fierce, malicious, ignorant, and untractable.

The baboon, properly ſo called, is from three to four feet high, very ſtrong built, with a thick body and limbs, and canine teeth, much longer than thoſe of men. It has large calloſities behind which are quite naked and red. Its tail is crooked and thick, and about ſeven or eight inches long. Its ſnout, for it can hardly be called a face, is long and thick, and on each ſide of its cheeks it has a pouch, into which, when ſatiated with eating, it puts the remainder of its proviſions. It is covered with long thick hair of a reddiſh brown colour, and pretty uniform over the whole body. It walks more commonly upon all fours than upright, and it hands as well as its feet are armed with long ſharp claws, inſtead of the broad round nails of the ape kind.

An animal thus made for ſtrength, and furniſhed with dangerous weapons, is found in fact

to be one of the moſt formidable of the ſavage race, in thoſe countries where it is bred. It appears in its native woods, to be impelled by two oppoſite paſſions; an hatred for the males of the human ſpecies, and a deſire for women. Were we aſſured of theſe ſtrange oppoſitions in its diſpoſition from one teſtimony alone, the account might appear doubtful; but as it comes from a variety of the moſt credible witneſſes, we cannot refuſe our aſſent. From them, therefore, we learn that theſe animals will often aſſail women in a body, and force them into the woods, where the keep them againſt their will, and kill them when refractory. From the Chevalier Forbin we learn, that in Siam whole troops of theſe will often ſally forth from their foreſts, and attack a village, when they know the men are engaged in their rice harveſt. They are on ſuch occaſions actuated, as well by deſire as by hunger; and not only plunder the houſes of whatever proviſions they can find, but endeavour to force the women. Theſe, however, as the Chevalier humorouſly relates, not at all liking either the manners or the figure of the paltry gallants, boldly ſtand on their defence, and with clubs, or whatever other arms they can provide, inſtead of anſwering their careſſes, oblige their ugly ſuitors to retreat;

not, however, before they have damaged or plundered every thing eatable they can lay their hands on.

At the Cape of Good Hope they are less formidable, but to the best of their power equally mischievous. They are there under a sort of natural discipline, and go about whatever they undertake with surprising skill and regularity. When they set about robbing an orchard or a vineyard, for they are extremely fond of grapes, apples, and ripe fruit, they do not go singly to work, but in large companies, and with preconcerted deliberation. On these occasions, a part of them enter the enclosure, while one is set to watch. The rest stand without the fence, and form a line reaching all the way from their fellows within to their rendezvous without, which is generally in some craggy mountain. Every thing being thus disposed, the plunderers within the orchard throw the fruit to those that are without as fast as they can gather it; or, if the wall or hedge be high, to those that sit on the top; and these hand the plunder to those next them on the other side. Thus the fruit is pitched from one to another all along the line, till it is safely deposited at their head-quarters. They catch it as readily as the most skilful tennis player can a ball; and while the business

is going forward, which they conduct with great expedition, a most profound silence is observed among them. Their centinel, during this whole time, continues upon the watch, extremely anxious and attentive; but if he perceives any one coming, he instantly sets up a loud cry, and at this signal the whole company scamper off. Nor yet are they at any time willing to leave the place empty-handed; for if they be plundering a bed of melons, for instance, they go off with one in their mouths, one in their hands, and one under their arm. If the pursuit is hot, they drop first that from under their arm, then that from their hand; and, if it be continued, they at last let fall that which they had hitherto kept in their mouths.

The natives of the Cape often take the young of these animals, and, feeding them with sheep and goats milk, accustom them to guard their houses; which duty they perform with great punctuality. Those, however, that have been brought into Europe, are headstrong, rude, and untractable. Dogs and cats, when they have done any thing wrong, will run off; but these seem careless and insensible of the mischief they do; and I have seen one of them break a whole table of china, as it should seem by design, without appearing in the least conscious of having

done amiss. It was not, however, in any respect so formidable as that described by Mr. Buffon, of which he gives the following description. "It was not," says he, "extremely ugly, and yet it excited horror. It continually appeared in a state of savage ferocity, gnashing its teeth, flying at the spectators, and furiously restless. It was obliged to be confined in an iron cage, the bars of which is so forcibly attempted to break, that the spectators were struck with apprehension. It was a sturdy bold animal, whose short limbs and powerful exertions shewed vast strength and agility. The long hair with which it was covered seemed to add to its apparent abilities; which, however, were in reality so great, that it could easily overcome more than a single man, unless armed. As to the rest, it for ever appeared excited by that passion which renders the mildest animals at intervals furious. Its lasciviousness was constant, and its satisfactions particular. Some others also of the monkey kind shewed the same degree of impudence, and particularly in the presence of women; but, as they were less in size, their petulence was less obvious, and their insolence more easily corrected."

But, however violent the desires of these animals may be, they are not found to breed

in our climate. The female brings forth uſually but one at a time, which ſhe carries in her arms, and in a peculiar manner clinging to her breaſt. As to the reſt, theſe animals are not at all carnivorous; they principally feed upon fruits, roots, and corn, and generally keep together in companies. The internal parts are more unlike thoſe of man than of quadrupedes, particularly the liver, which is like that of a dog divided into ſix lobes. The lungs are more divided, the guts in general are ſhorter, and the kidnies rounder and flatter.

The largeſt of the baboon kind is the Mandril; an ugly diſguſting animal, with a tail ſhorter than the former, though of a much larger ſtature, being from four to five feet high. The muzzle is ſtill longer than that of the preceding, it is of a bluiſh colour, and ſtrongly marked with wrinkles, which give it a frightful appearance. But what renders it truly loathſome is, that from the noſe there is always ſeen iſſuing a ſnot, which the animal takes care at intervals to lick off with its tongue and ſwallow. It is a native of the Gold Coaſt; it is ſaid to walk more frequently erect than upon all fours; and when diſpleaſed, to weep like a child. There was one of them ſhewn in England ſome years ago. It ſeemed tame but ſtupid, and had a

method of opening its mouth and blowing at ſuch as came too near.

The Wanderow is a baboon rather leſs than the former, with the body leſs compact and muſcular, and the hinder parts ſeemingly more feeble. The tail is from ſeven to eight inches long; the muzzle is prominent as in the reſt of this kind; but what particularly diſtinguiſhes it is a large long white head of hair, together with a monſtrous white beard, coarſe, rough, and deſcending; the colour of the reſt of the body being brown or black. As to the reſt, in its ſavage ſtate, it is equally fierce with the others; but, with a proper education, it ſeems more tractable than moſt of its kind, and is chiefly ſeen in the woods of Ceylon and Malabar.

The Maimon of Buffon, which Edwards calls the Pigtail, is the laſt of the baboons, and in ſize rather approaches the monkey, being no larger than a cat. Its chief diſtinction, beſides its prominent muzzle, like a baboon, is in the tail, which is about five or ſix inches long, and curled up like that of a hog; from which circumſtance, peculiar to this animal, our Engliſh naturaliſt gave it the name. It is a native of Sumatra, and does not well endure the rigours of our climate. Edwards, however, kept one

of them a year in London; and another of them happening at the same time to be exposed in a shew of beasts, he brought the two exiles together, to see if they would claim or acknowledge their kindred. The moment they came into each other's presence, they testified their mutual satisfaction, and seemed quite transported at the interview.

THE MONKEY.

THE varieties in the larger tribes of the monkey kind are but few; in the ape we have seen but four, and in the baboon about as many. But when we come to the smaller class, the differences among them seem too tedious for enumeration. These, as was observed in the beginning, are all small in stature, and with long tails, by which they are distinguished from the preceding, that entirely want the tail, or are large and have but a short one. The varieties in the form and colour of dogs, or squirrels, is nothing to what are found among monkies of the smaller kind. Bosman mentions above fifty sorts on the Gold Coast alone, and Smith confirms the account. Condamine asserts that it would take up a volume to describe the differences of these to be found along the river Amazons; and we are sure that every one of

these is very different from those on the African coast. Naturalists, however, have undertaken to make a catalogue of their numbers; and they either transmit their descriptions from one to another, or only enumerate those few that have found their way to Europe, and have fallen within the narrow circle of their own observation. But, though it may be proper enough to describe such as fall under notice, it is certainly wrong to offer a scanty catalogue as complete, and to induce the reader to suppose he sees a picture of the whole groupe of these animals when he is only presented with a small part of the number. Such, therefore, as are fond of the reputation of adding new descriptions to the stock of natural history, have here a wide, though surely a barren, field to enlarge in; and they will find it no difficult matter, by observing the various animals of this kind that are from time to time brought from their native coasts to this country, to indulge in description, and to ring the changes upon all the technical terms with which this most pleasing science is obscured and rendered disgusting. For my own part, I will spare the reader and myself the trouble of entering into an elaborate description of each; content with observing once more, that their numbers are very great and their dif-

ferences very trifling. There is ſcarce a country, in the tropical climates that does not ſwarm with them, and ſcarce a foreſt that is not inhabited by a race of monkies diſtinct from all others. Every different wood along the coaſts of Africa may be conſidered as a ſeparate colony of monkies, differing from thoſe of the next diſtrict in colour, in ſize, and malicious miſchief. It is indeed remarkable that the monkies of two cantons are never found to mix with each other, but rigorouſly to obſerve a ſeparation; each foreſt produces only its own; and theſe guard their limits from the intruſion of all ſtrangers of a different race from themſelves. In this they ſomewhat reſemble the human inhabitants of the ſavage nations, among whom they are found, where the petty kingdoms are numerous, and their manners oppoſite. There, in the extent of a few miles, the traveller is preſented with men ſpeaking different languages, profeſſing different religions, governed by different laws, and only reſembling each other in their mutual animoſity.

In general, monkies of all kinds, being leſs than the baboon, are endued with leſs powers of doing miſchief. Indeed, the ferocity of their nature ſeems to diminiſh with their ſize; and when taken wild in the woods, they are ſooner

tamed, and more eafily taught to imitate man than the former. More gentle than the baboon, and lefs grave and fullen than the ape, they foon begin to exert all their fportive mimickries, and are eafily reftrained by correction. But it muft be confeffed that they will do nothing they are defired without beating; for, if their fears be entirely removed, they are the moft infolent and headftrong animals in nature.

In their native woods they are not lefs the pefts of man than of other animals. The monkies, fays a traveller *, are in poffeffion of every foreft where they refide, and may be confidered as the mafters of the place. Neither the tiger, nor the lion itfelf, will venture to difpute the dominion, fince thefe, from the tops of trees, continually carry on an offenfive war, and by their agility efcape all poffibility of purfuit. Nor have the birds lefs to fear from their continual depredations; for, as thefe harmlefs inhabitants of the wood ufually build upon trees, the monkies are for ever on the watch to find out and rob their nefts; and fuch is their petulent delight in mifchief, that they will fling their eggs againft the ground when they want appetite or inclination to devour them.

There is but one animal in all the foreft that

* Defcription Hiftorique de Macacar, p. 51.

ventures to oppoſe the monkey, and that is the ſerpent. The larger ſnakes are often ſeen winding up the trees where the monkies reſide; and, when they happen to ſurpriſe them ſleeping ſwallow them whole before the little animals have time to make a defence. In this manner, the two moſt miſchievous kinds in all nature keep the whole foreſt between them; both equally formidable to each other, and for ever employed in mutual hoſtilities. The monkies in general inhabit the tops of the trees, and the ſerpents cling to the branches nearer the bottom; and in this manner they are for ever ſeen near each other, like enemies in the ſame field of battle. Some travellers, indeed, have ſuppoſed that their vicinity rather argued their mutual friendſhip, and that they united in this manner to form an offenſive league againſt all the reſt of animated nature *. "I have ſeen theſe monkies," ſays Labat, "playing their gambols upon thoſe very branches on which the ſnakes were repoſing, and jumping over them without receiving any injury, although the ſerpents of that country were naturally vindictive, and always ready to bite whatever diſturbed them." Theſe gambols, however, were probably nothing more than the inſults of

* Labat, Relat. de l'Afriq. Occident. p. 317.

an enemy that was conſcious of its own ſafety; and the monkies might have provoked the ſnake in the ſame manner as we often ſee ſparrows twitter at a cat. However this be, the foreſt is generally divided between them; and theſe woods, which Nature ſeems to have embelliſhed with her richeſt magnificence, rather inſpire terror than delight, and chiefly ſerve as retreats for miſchief and malignity.

The enmity of theſe animals to mankind, is partly ridiculous, and partly formidable. They ſeem, ſays Le Comte and others, to have a peculiar inſtinct in diſcovering their foes; and are perfectly ſkilled, when attacked, in mutually defending and aſſiſting each other. When a traveller enters among theſe woods, they conſider him as an invader upon their dominions, and join all to repel the intruſion. At firſt they ſurvey him with a kind of inſolent curioſity. They jump from branch to branch, purſue him as he goes along, and make a loud chattering, to call the reſt of their companions together. They then begin their hoſtilities by grinning, threatening, and flinging down the withered branches at him, which they break from the trees: they even take their excrements in their hands, and throw them at his head. Thus they attend him wherever he goes;

jumping from tree to tree with ſuch amazing ſwiftneſs, that the eye can ſcarce attend their motions. Although they take the moſt deſperate leaps, yet they are ſeldom ſeen to come to the ground, for they eaſily faſten upon the branches that break their fall, and ſtick, either by their hands, feet, or tail, wherever they touch. If one of them happens to be wounded, the reſt aſſemble round, and clap their fingers into the wound, as if they were deſirous of ſounding its depth. If the blood flows in any quantity, ſome of them keep it ſhut up, while others get leaves, which they chew, and thruſt into the opening: however extraordinary this may appear, it is aſſerted to be often ſeen, and to be ſtrictly true. In this manner they wage a petulant, unequal war; and are often killed in numbers before they think proper to make a retreat. This they effect with the ſame precipitation with which they at firſt came together. In this retreat the young are ſeen clinging to the back of the female, with which ſhe jumps away, ſeemingly unembarraſſed by the burthen.

The curioſity of the Europeans has, in ſome meaſure, induced the natives of the places where theſe animals reſide, to catch or take them alive by every art they are able. The

uſual way in ſuch caſe, is to ſhoot the female as ſhe carries her young, and then both, of courſe, tumble to the ground. But even this is not eaſily performed; for if the animal be not killed outright, it will not fall; but clinging to ſome branch, continues, even when dead, its former graſp, and remains on the tree where it was ſhot, until it drops off by putrefaction. In this manner it is totally loſt to the purſuer; for to attempt climbing the tree, to bring either it or the young one down, would probably be fatal, from the number of ſerpents that are hid among the branches. For this reaſon the ſportſman always takes care to aim at the head; which, if he hits, the monkey falls directly to the ground; and the young one comes down at the ſame time, clinging to its dead parent.

The Europeans along the coaſts of Guinea, often go into the woods to ſhoot monkies; and nothing pleaſes the Negroes more than to ſee thoſe animals drop, againſt which they have the greateſt animoſity. They conſider them, and not without reaſon, as the moſt miſchievous and tormenting creatures in the world; and are happy to ſee their numbers deſtroyed, upon a double account; as well becauſe they dread their devaſtations, as becauſe they love their fleſh. The monkey, which is always ſkinned

before it is eaten, when ſerved up at a Negroe feaſt, looks ſo like a child, that an European is ſhocked at the very ſight. The natives, however, who are not ſo nice, devour it as one of the higheſt delicacies; and aſſiduouſly attend our ſportmen, to profit by the ſpoil. But what they are chiefly aſtoniſhed at, is to ſee our travellers carefully taking the young ones alive, while they leave them the old ones, that are certainly the moſt fit to be eaten. They cannot comprehend what advantage can ariſe to us from educating or keeping a little animal, that, by experience, they know to be equally fraught with tricks and miſchief: ſome of them have even been led to ſuppoſe, that, with a kind of perverſe affection, we love only creatures of the moſt miſchievous kinds; and having ſeen us often buy young and tame monkies, they have taken equal care to bring rats to our factors, offering them for ſale, and greatly diſappointed at finding no purchaſer for ſo hopeful a commodity *.

The Negroes conſider theſe animals as their greateſt plague; and, indeed, they do incredible damage, when they come in companies to lay waſte a field of Indian corn or rice, or a plantation of ſugar-canes. They carry off as

* Labat, Relat. de l'Afriq. Occident, p. 317.

much

much as they are able; and they deſtroy ten times more than they bear away. Their manner of plundering is pretty much like that of the baboons, already mentioned, in a garden. One of them ſtands centinel upon a tree, while the reſt are plundering, carefully and cautiouſly turning on every ſide, but particularly to that on which there is the greateſt danger: in the mean time, the reſt of the ſpoilers purſue their work with great ſilence and aſſiduity; they are not contented with the firſt blade of corn, or the firſt cane that they happen to lay their hands on: they firſt pull up ſuch as appear moſt alluring to the eye: they turn it round, examine, compare it with others, and if they find it to their mind, ſtick it under one of their ſhoulders. When in this manner they have got their load, they begin to think of retreating: but if it ſhould happen that the owners of the field appear to interrupt their depredations, their faithful centinel inſtantly gives notice, by crying out, *houp, houp, houp*; which the reſt perfectly underſtand, and all at once throwing down the corn they hold in the left hands, ſcamper off upon three legs, carrying the remainder in the right. If they are ſtill hotly purſued, they then are content to throw down their whole burthen, and to take refuge

among their woods, on the tops of which they remain in perfect ſecurity.

Were we to give faith to what ſome travellers aſſure us, of the government, policies, and ſubordination of theſe animals, we might perhaps be taxed with credulity; but we have no reaſon to doubt that they are under a kind of diſcipline, which they exerciſe among each other. They are generally ſeen to keep together in companies, to march in exact order, and to obey the voice of ſome particular chieftain, remarkable for his ſize and gravity. One ſpecies of theſe, which Mr. Buffon calls the Ouarine, and which are remarkable for the loudneſs and the diſtinctneſs of their voice, are ſtill more ſo for the uſe to which they convert it. "I have frequently been a witneſs," ſays Margrave, "of their aſſemblies and deliberations. Every day, both morning and evening, the ouarines aſſemble in the woods to receive inſtructions. When all come together, one among the number takes the higheſt place on a tree, and makes a ſignal with his hand to the reſt to ſit round, in order to hearken. As ſoon as he ſees them placed, he begins his diſcourſe, with ſo loud a voice, and yet in a manner ſo precipitate, that to hear him at a diſtance, one would think the whole company were crying out at the ſame

time: however, during that time, one only is ſpeaking; and all the reſt obſerve the moſt profound ſilence. When this has done, he makes a ſign with the hand for the reſt to reply; and at that inſtant they raiſe their voices together, until by another ſignal of the hand they are enjoined ſilence. This they as readily obey; till, at laſt, the whole aſſembly breaks up, after hearing a repetition of the ſame preachment."

The chief food of the monkey-tribe is fruits, the buds of trees, or ſucculent roots and plants. They all, like man, ſeem fond of ſweets; and particularly the pleaſant juice of the palm-tree, and the ſugar-cane. With theſe the fertile regions in which they are bred ſeldom fail to ſupply them; but when it happens that theſe fail, or that more nouriſhing food becomes more agreeable, they eat inſects and worms; and, ſometimes, if near the coaſts, deſcend to the ſea-ſhore, where they eat oyſters, crabs, and ſhell-fiſh. Their manner of managing an oyſter is extraordinary enough; but it is too well atteſted, to fail of our aſſent. As the oyſters in the tropical climates are generally larger than with us, the monkies, when they go to the ſea-ſide, pick up a ſtone, and clap it between the opening ſhells: this prevents them

from closing; and the monkey then eats the fish at his ease. They often also draw crabs from the water, by putting their tail to the hole where that animal takes refuge, and the crab fastening upon it, they withdraw it with a jerk, and thus pull their prey upon shore. This habit of laying traps for other animals, makes them very cautious of being entrapped themselves; and I am assured, by many persons of credit, that no snare, how nicely baited soever, will take the monkey of the West-Indian islands; for having been accustomed to the cunning of man, it opposes its natural distrust to human artifice.

The monkey generally brings forth one at a time, and sometimes two. They are rarely found to breed when brought over into Europe; but of those that do, they exhibit a very striking picture of parental affection. The male and female are never tired of fondling their young one. They instruct it with no little assiduity; and often severely correct it, if stubborn, or disinclined to profit by their example: they hand it from one to the other; and when the male has done shewing his regard, the female takes her turn. When wild in the woods, the female, if she happens to have two, carries one on her back, and the other in her arms: that

on her back clings very clofely, clafping its hands round her neck, and its feet about her middle; when fhe wants to fuckle it, fhe then alters their pofition; and that which has been fed gives place to the other, which fhe takes in her arms. It often happens that fhe is unable to leap from one tree to another, when thus loaden; and upon fuch occafions, their dexterity is very furprifing. The whole family form a kind of chain, locking tail in tail, or hand in hand, and one of them holding the branch above, the reft fwing down, balancing to and fro, like a pendulum, until the undermoft is enabled to catch hold of the lower branches of fome neighbouring tree. When the hold is fixed below, the monkey lets go that which was above, and thus comes undermoft in turn; but, creeping up along the chain, attains the next branches, like the reft; and thus they all take poffeffion of the tree, without ever coming to the ground.

When in a ftate of domeftic tamenefs, thofe animals are very amufing, and often fill up a vacant hour, when other entertainment is wanting. There are few that are not acquainted with their various mimickries, and their capricious feats of activity. But it is generally in company with other animals of a more fimple

diſpoſition that their tricks and ſuperior inſtincts are ſhewn; they ſeem to take a delight in tormenting them; and I have ſeen one of them amuſing itſelf for hours together, in impoſing upon the gravity of a cat. Eraſmus tells us of a large monkey, kept by Sir Thomas More, that, one day diverting itſelf in his garden, where ſome tame rabbits were kept, played ſeveral of its uſual pranks among them, while the rabbits ſcarce well knew what to make of their new acquaintance: in the mean time, a weaſel, that came for very different purpoſes than thoſe of entertainment, was ſeen peering about the place in which the rabbits were fed, and endeavouring to make its way, by removing a board that cloſed their hutch. While the monkey ſaw no danger, it continued a calm ſpectator of the enemy's efforts; but juſt when, by long labour, the weaſel had effected its purpoſe, and had removed the board, the monkey ſtept in, and, with the utmoſt dexterity, faſtened it again in its place; and the diſappointed weaſel was too much fatigued to renew its operations. To this I will only add what Father Carli, in his hiſtory of Angola, aſſures us to be true. In that horrid country, where he went to convert the ſavage natives to Chriſtianity, and met with nothing

but diſtreſs and diſappointment; while his health was totally impaired by a raging heats of the climate, his patience exhauſted by the obſtinacy of the ſtupid natives, and his little proviſions daily plundered, without redreſs, in ſuch an exigency he found more faithful ſervices from the monkies than the men; theſe he had taught to attend him, to guard him, while ſleeping, againſt thieves and rats, to comb his head, to fetch his water; and, he aſſerts, that they were even more tractable than the human inhabitants of the place. It is indeed remarkable, that in thoſe countries where the men are moſt barbarous and ſtupid, the brutes are moſt active and ſagacious. It is in the torrid tracts, inhabited by Barbarians, that ſuch various animals are found with inſtinct ſo nearly approaching reaſon. The ſavages both of Africa and America, accordingly ſuppoſe monkies to be men; idle, ſlothful, rational beings; capable of ſpeech and converſation; but obſtinately dumb, for fear of being compelled to labour.

As of all ſavages, thoſe of Africa are the moſt brutal, ſo, of all countries, the monkies of Africa are the moſt expert and entertaining. The monkies of America are, in general, neither ſo ſagacious nor ſo tractable, nor is their form ſo nearly approaching that of man.

The monkies of the new continent, may be very eaſily diſtinguiſhed from thoſe of the old, by three marks. Thoſe of the ancient continent are univerſally found to have a naked callous ſubſtance behind, upon which they ſit; which thoſe of America are entirely without: thoſe alſo of the ancient continent have the noſtrils differently formed, more reſembling thoſe of men, the holes opening downward; whereas the American monkies have them opening on each ſide: thoſe of the ancient world have pouches on each ſide the jaw, into which they put their proviſions, which thoſe of America are without: laſtly, none of the monkies of the ancient continent hang by the tail, which many of the American ſorts are known to do. By theſe marks the monkies of either continent, may be readily diſtinguiſhed from each other, and prized accordingly. The African monkey, as I am aſſured, requires a longer education, and more correction, than that of America; but it is at laſt found capable of more various powers of imitation; and ſhews a greater degree of cunning and activity.

Mr. Buffon, who has examined this race of imitative beings, with greater accuracy than any other naturaliſt before him, makes but

nine ſpecies of monkies belonging to the ancient continent; and eleven belonging to the new. To all theſe he gives the names which they go by, in their reſpective countries; which, undoubtedly, is the method leaſt liable to error, and the moſt proper for imitation.

Of the monkies of the ancient continent, the firſt, he deſcribes, is the Macaguo; ſomewhat reſembling a baboon in ſize, ſtrength of body, and an hideous wrinkled viſage: it differs, however, in having a very long tail, which is covered with tufted hair. It is a native of Congo.

The ſecond is the Patas, which is about the ſome ſize with the former; but differs, in having a longer body, and a face leſs hideous; it is particularly remarkable for the colour of its hair, which is of a red, ſo brilliant, that the animal looks as if it were actually painted. It is uſually brought from Senegal; and by ſome, called the Red African Monkey.

The third of the ancient continent is the Malbrouk; of which he ſuppoſes the monkey which he calls the Bonet Chinois to be a variety. The one is remarkable for a long tail, and long beard; the other, for a cap of hair, that covers the crown of the head, from whence it takes the name. Both are natives of the Eaſt Indies;

and the Bramins, who extend their charity to all the brute creation, have hoſpitals for ſuch of them as happen to be ſick, or otherwiſe diſabled.

The fourth of this kind is the Mangabey; this may be diſtinguiſhed from all others, by its eye-lids, which are naked, and of a ſtriking whiteneſs. It is a native of Madagaſcar.

The fifth is the Mona, or the Cephus of the ancients: it is diſtinguiſhed by its colour, which is variegated with black and red; and its tail is of an aſh-colour, with two white ſpots on each ſide, at its inſertion. It is a native of the northern parts of Africa.

The ſixth is the Callitrix, or Green Monkey of St. Iago; diſtinguiſhed by its beautiful green colour on the back, its white breaſt and belly, and its black face.

The ſeventh is the Mouſtoc, or White Noſe; diſtinguiſhed by the whiteneſs of its lips, from whence it has received its name, the reſt of the face being of a deep blue. It is a native of the Gold Coaſt, and a very beautiful little animal.

The eighth is the Talapoin; and may be diſtinguiſhed as well by its beautiful variety of green, white, and yellow hair, as by that under the eyes, being of a greater length than the reſt.

It is ſuppoſed to be a native of Africa and the Eaſt.

The ninth and laſt of the monkies of the ancient continent, is the Douc, ſo called in Cochinchina, of which country it is a native. The douc ſeems to unite the characters of all the former together: with a long tail, like the monkey; of a ſize as large as the baboon; and with a flat face, like the ape: it even reſembles the American monkies, in having no callous on its poſteriors. Thus it ſeems to form the ſhade by which the monkies of one continent are linked with thoſe of the other.

Next come the monkies of the new continent; which, as hath been ſaid, differ from thoſe of the old, in the make of their noſtrils, in their having no calloſity on their poſteriors, and in their having no pouches on each ſide of the jaw. They differ alſo from each other, a part of them making no uſe of their tails to hang by; while others of them have the tail very ſtrong and muſcular, and ſerving by way of a fifth hand to hold by. Thoſe with muſcular holding tails, are called Sapajous; thoſe with feeble, uſeleſs tails, are called Sagoins. Of the ſapajous there are five ſorts: of the ſagoins there are ſix.

The firſt of the ſapajous is the Warine, or

the Brazilian Guariba. This monkey is as large as a fox, with black long hair, and remarkable for the loudneſs of its voice. It is the largeſt of the monkey kind to be found in America.

The ſecond is the Coaiti; which may be diſtinguiſhed from the reſt, by having no thumb, and, conſequently, but four fingers on the two fore paws. The tail, however, ſupplies the defects of the hand; and with this the animal flings itſelf from one tree to another, with ſurpriſing rapidity.

The third is the Sajou; diſtinguiſhed from the reſt of the ſapajous, by its yellowiſh, fleſh-coloured face.

The fourth is the Sai. It is ſomewhat larger than the ſajou, and has a broader muzzle. It it called alſo the Bewailer; from its peculiar manner of lamenting, when either threatened or beaten.

The fifth and laſt of the ſapajou kind, or monkies that hold by the tail, is the Samiri, or Aurora; which is the ſmalleſt and the moſt beautiful of all. It is of a fine orange colour, with two circles of fleſh round the eyes. It is a very tender, delicate animal, and held in high price.

Of the ſagoins with feeble tails, there are ſix

kinds. The firſt and the largeſt, is the Saki, or Cagui; ſo remarkable for the length of the hair on its tail, that it has been often termed the Fox-tailed Monkey.' It is of different ſizes; ſome being twice as large as others.

The ſecond of this kind is the Tamaim; which is uſually black, with the feet yellow. Some, however, are found all over brown, ſpotted with yellow.

The third is the Wiſtiti; remarkable for the large tufts of hair upon its face, and its annulated tail.

The fourth is the Marikina; with a mane round the neck, and a bunch of hair at the end of the tail, like a lion.

The fifth is called the Pinch; with the face of a beautiful black, and white hair that deſcends on each ſide of the face, like that of man.

The laſt, leaſt, and moſt beautiful of all, is the Mico, an animal too curiouſly adorned, not to demand a particular deſcription; which is thus given of it, by Mr. Condamine. "That," ſays he, "which the governor of Para made me a preſent of, was the only one of its kind that was ſeen in the country. The hair on its body was of a beautiful ſilver colour, brighter than that of the moſt venerable human hair:

while the tail was of a deep brown, inclining to blackneſs. It had another ſingularity, more remarkable than the former; its ears, its cheeks, and lips, were tinctured with ſo bright a vermilion, that one could ſcarce be led to ſuppoſe that it was natural. I kept it a year; and it was ſtill alive when I made this deſcription of it, almoſt within ſight of the coaſts of France: all I could then do, was to preſerve it in ſpirits of wine, which might ſerve to keep it in ſuch a ſtate, as to ſhew that I did not in the leaſt exaggerate in my deſcription."

OF THE MAKI.

THE laſt of the monkey kind are the Makies; which have no other pretenſions to be placed in this claſs, except that of having hands like the former, and making uſe of them to climb trees, or to pluck their food. Animals of the hare kind, indeed, are often ſeen to feed themſelves with their fore paws, but they can hold nothing in one of them ſingly, and are obliged to take up whatever they eat in both at once: but it is otherwiſe with the maki; as well as the monkey kinds, they ſeize their food with one hand, pretty much like a man, and graſp it with great eaſe and firmneſs. The

De Seve del. J. Taylor sculp.

The Mococo.

maki, therefore, from this conformation in its hands, both before and behind, approaches nearly to the monkey kind; but, in other respects, ſuch as the make of the ſnout, the form of the ears, and the parts that diſtinguiſh the ſexes, it entirely differs from them. There are many different kinds of theſe animals; all varying from each other in colour or ſize, but agreeing in the human-like figure of their hands and feet, and in their long noſe, which ſomewhat reſembles that of a dog. As moſt of theſe are bred in the depths of the foreſt, we know little more concerning them than their figure. Their way of living, their power of purſuit and eſcape, can only be ſuppoſed, from the analogy of their conformation, ſomewhat to reſemble thoſe of the monkey.

The firſt of this kind is the Mococo; a beautiful animal, about the ſize of a common cat, but the body and limbs ſlenderer, and of a longer make. It has a very long tail, at leaſt double the length of its body; it is covered with fur, and marked alternately with broad rings of black and white. But what it is chiefly remarkable for, beſides the form of its hands and feet, is the largeneſs of its eyes, which are ſurrounded with a broad black ſpace; and the length of the hinder legs, which by far exceed

thoſe before. When it ſleeps, it brings its noſe to its belly, and its tail over its head. When it plays, it uſes a ſort of galloping, with its tail raiſed over its back, which keeps continually in motion. The head is covered with dark aſh-coloured hair; the back and ſides, with a red aſh-colour, and not ſo dark as on the head; and the whole gloſſy, ſoft, and delicate, ſmooth to the touch, and ſtanding almoſt upright, like the pile of velvet. It is a native of Madagaſcar; appears to be an harmleſs gentle animal; and though it reſembles the monkey in many reſpects, it has neither its malice nor its miſchief: nevertheleſs, like the monkey, it ſeems to be always in motion; and moves, like all four-handed animals, in an oblique direction.

A ſecond of this kind, which is alſo a native of Madagaſcar, is the Mongooz; which is leſs than the former; with a ſoft, gloſſy robe, but a little curled. The noſe alſo is thicker than that of the mococo; they eyes are black, with orange-coloured circles round the pupil; and the tail is of one uniform colour. As to the reſt, it is found of various colours; ſome being black, others brown; and its actions ſomewhat reſemble thoſe of a monkey.

The Vari is much larger than either of the

De Seve del. J. S. Taylor sculp

The Lori.

former; its hair is much longer, and it has a kind of ruff round the neck, confifting of very long hair, by which it may be eafily diftinguifhed from the reft. It differs alfo in its difpofition, which is fierce and favage; as alfo in the loudnefs of its voice, which fomewhat refembles the roaring of the lion. This alfo is a native of Madagafcar.

To this tribe we may refer a little four-handed animal, of the ifland of Ceylon, which Mr. Buffon calls the Lori; very remarkable for the fingularity of its figure. This is, of all other animals, the longeft, in proportion to its fize; having nine vertebræ in the loins; whereas other quadrupedes have only feven*. The body appears ftill the longer, by having no tail. In other refpects, it refembles thofe of the maki kind; as well in its hands and feet, as in its fnout, and in the gloffy qualities of its hair. It is about the fize of a fquirrel; and appears to be a tame, harmlefs little animal.

OF THE OPPOSSUM, AND ITS KINDS.

TO thefe four-handed animals of the ancient continent, we may add the four-handed

* Buffon, vol. xxvi. p. 274.

animals of the new, that uſe their hands like the former, as well as their tails, and that fill up the chaſm between the monkey tribe and the lower orders of the foreſt. As the maki kind in ſome meaſure ſeem to unite the fox and the monkey in their figure and ſize, ſo theſe ſeem to unite the monkey and the rat. They are all leſs than the former; they have long tails, almoſt bare of hair; and their fur, as well as their ſhape, ſeems to place them near the rat kind. Some have accordingly ranked them in that claſs; but their being four-handed, is a ſufficient reaſon for placing them in the rear of the monkies.

The firſt and the moſt remarkable of this tribe is the Oppoſſum, an animal found both in North and South America, of the ſize of a ſmall cat. The head reſembles that of a fox; it has fifty teeth in all; but two great ones in the midſt, like thoſe of a rat. The eyes are little, round, clear, lively, and placed upright; the ears are long, broad, and tranſparent, like thoſe of the rat kind; its tail alſo encreaſes the ſimilitude, being round, long, a little hairy in the beginning, but quite naked towards the end. The fore legs are ſhort, being about three inches long; while thoſe behind are about four. The feet are like hands, each having

De Seve del. Js. Taylor sculp.

The Opossum.

five toes or fingers, with white crooked nails, and rather longer behind than before. But it is particular in this animal, that the thumb on the hinder legs wants a nail; whereas the fingers are furniſhed with clawed nails as uſual.

But that which diſtinguiſhes this animal from all others, and what has excited the wonder of mankind for more than two centuries, is the extraordinary conformation of its belly, as it is found to have a falſe womb, into which the young, when brought forth in the uſual manner, creep, and continue for ſome days longer, to lodge and ſuckle ſecurely. This bag, if we may ſo call it, being one of the moſt extraordinary things in natural hiſtory, requires a more minute deſcription. Under the belly of the female is a kind of ſlit or opening, of about three inches long; this opening is compoſed of a ſkin, which makes a bag internally, which is covered on the inſide with hair, and in this bag are the teats of the female; and into it the young, when brought forth, retire, either to ſuckle or to eſcape from danger. This bag has a power of opening and ſhutting, at the will of the animal; and this is performed by means of ſeveral muſcles, and two bones, that are fitted for this purpoſe, and that are peculiar to this ani-

mal only. Theſe two bones are placed before the os pubis, to which they are joined at the baſe; they are about two inches long, and grow ſmaller and ſmaller to their extremities. Theſe ſupport the muſcles that ſerve to open the bag, and give them a fixture. To theſe muſcles there are antagoniſts, that ſerve, in the ſame manner, to ſhut the bag; and this they perform ſo exactly, that in the living animal the opening can ſcarce be diſcerned, except when the ſides are forcibly drawn aſunder. The inſide of this bag is furniſhed with glands, that exſude a muſky ſubſtance, which communicates to the fleſh of the animal, and renders it unfit to be eaten. It is not to be ſuppoſed that this is the place where the young are conceived, as ſome have been led to imagine; for the oppoſſum has another womb, like that of the generality of animals, in which generation is performed in the ordinary manner. The bag we have been deſcribing, may rather be conſidered as a ſupplemental womb. In the real womb, the little animal is partly brought to perfection; in the ordinary one, it receives a kind of additional incubation; and acquires, at laſt, ſtrength enough to follow the dam wherever ſhe goes. We have many reaſons to ſuppoſe that the

young of this animal are all brought ſorth premat urely, or before they have acquired that degree of perfection, which is common in other quadrupedes. The little ones, when firſt produced, are in a manner but half completed; and ſome travellers aſſert, that they are, at that time, not much larger that flies. We are aſſured alſo, that immediately on quitting the real womb, they creep into the falſe one; where they continue fixed to the teat, until they have ſtrength ſufficient to venture once more into the open air, and ſhare the fatigues of the parent. Ulloa aſſures us, that he has found five of theſe little creatures hidden in the belly of the dam three days after ſhe was dead, ſtill alive, and all clinging to the teat with great avidity. It is probable, therefore, that upon their firſt entering the falſe womb, they ſeldom ſtir out from thence; but when more advanced, they venture forth ſeveral times in the day; and, at laſt, ſeldom make uſe of their retreat, except in caſes of neceſſity or danger. Travellers are not agreed in their accounts of the time which theſe animals take to continue in the falſe womb; ſome aſſure us, they remain there for ſeveral weeks; and others, more preciſely mention a month. During this

period of ſtrange geſtation, there is do difficulty in opening the bag in which they are concealed; they may be reckoned, examined, and handled, without much inconvenience; for they keep fixed to the teat, and cling there as firm as if they made a part of the body of the animal that bears them. When they are grown ſtronger, they drop from the teat into the bag in which they are contained; and, at laſt, find their way out, in ſearch of more copious ſubſiſtence. Still, however, the falſe belly ſerves them for a reatreat; either when they want to ſleep or to ſuckle, or when they are purſued by an enemy. The dam, on ſuch occaſions, opens her bag to receive them, which they enter,

——Pars formidine turpi
Scandunt rurſus equum et nota conduntur in alvo.

The Oppoſſum, when on the ground, is a ſlow, helpleſs animal; the formation of its hands, are alone ſufficient to ſhew its incapacity of running with any degree of ſwiftneſs: but, to counterbalance this inconvenience, it climbs trees with great eaſe and expedition *. It chiefly ſubſiſts upon birds; and hides among the leaves of the trees, to ſeize them by ſurprize. It often alſo hangs by the tail, which is long and

* Buffon, vol. xxi. p. 174.

muſcular; and, in this ſituation, for hours together, with the head downwards, it keeps watching for its prey. If any leſſer animal, which it is able to overcome, paſſes underneath, it drops upon it with deadly aim, and quickly devours it. By means of its tail, the oppoſſum alſo flings from one tree to another, hunts inſects, eſcapes its purſuers, and provides for its ſafety. It ſeems to be a creature that lives upon vegetables, as well as animal ſubſtances, roots, ſugar-canes, the bark, and even the leaves of trees. It is eaſily tamed, but it is a diſagreeable domeſtic, as well from its ſtupidity and figure, as its ſcent, which, however fragrant in ſmall quantities, fails not to be ungrateful when copiouſly ſupplied.

An animal greatly reſembling the former *, is the Marmoſe, which is found in the ſame continent. It ſeems only to differ in ſize, being leſs; and, inſtead of a bag to receive its young, has only two longitudinal folds near the thighs, within which, the young, which are prematurely brought forth, as in the laſt inſtance, continue to ſuckle. The young of theſe, when firſt produced, are not above the ſize of a bean; but continue ſticking to the

* Buffon, vol. xxi. p. 212.

teat, until they have arrived at greater maturity.

The Cayopolin is ſomewhat larger than the former; and a good deal reſembling it in habits and figure, except that its ſnout is more pointed, its tail longer in proportion, and its colour different, being of an aſh, ſomewhat inclining to yellow; however, I ſhould ſuppoſe it to be only a variety of the former.

To this number we may add the Phalanger, ſo called by Mr. Buffon; a good deal reſembling the former, but diſtinguiſhed by the faſhion of its hinder hands: the thumb and the fore finger being joined together, except at the extremities. This animal is about the ſize of a rat; and has, accordingly, by ſome, been called the Rat of Surinam.

The laſt animal of this claſs is called, by Mr. Buffon, the Tarſier. This extraordinary little animal reſembles the former, in having four hands, and a long tail; but it differs very much in the extreme length of its hinder legs, which are longer than the reſt of its whole body. The bones of that part of the foot called the tarſus, are likewiſe ſo very long, that from thence the animal has received its name: the tail is naked in the middle, and hairy only at both extre-

mities: its hair is woolly, soft, and a deep ash colour. As to the rest, it is unknown from what country this animal was brought; but the naturalist from whom we have its description, supposes it to be a native America.

From this general description of four-handed animals, we perceive what few advantages the brute creation derive from those organs that, in man, are employed to so many great and useful purposes. The being able to pluck their food from the trees, the capacity of clinging among the branches, or at most of converting one of those branches into a weapon of offence, are the highest stretches of their sagacity, and the only use their hands have hitherto been employed in: and yet, some superficial men have asserted, that the hands alone are sufficient to vindicate the dominion of mankind over other animals; and that much of his boasted reason, is nothing more than the result of his happier conformation: however, were this so, an ape or a monkey would in some instances be more rational than we; their fingers are smaller, and, in some of them, more finely formed than ours. To what a variety of purposes might they not be employed, if their powers were properly exerted! Those works which we, from the large-

nefs of our fingers, are obliged to go clumfily about, one of thefe could very eafily perform with the utmoft exactnefs; and if the finenefs of the hand affifted reafon, an ape would be one of the moft reafonable beings in the creation. But thefe admirably formed machines, are almoft ufelefs both to mankind and themfelves; and contribute little more to the happinefs of animal life, than the paws of the loweft quadrupede. They are fupplied, indeed, with the organs; but they want the mind, to put them into action: it is that reafoning principle alone, with which man has been endowed, that can adapt feemingly oppofite caufes, to concur in the fame general defign; and even where the organs are deficient, that can fupply their place, by the intervention of affifting inftruments. Where reafon prevails, we find that it fcarcely matters what the organs are that give it the direction; the being furnifhed with that principle, ftill goes forward, fteadily and uniformly fuccefsful; breaks through every obftacle, and becomes mafter of every enterprize. I have feen a man, without hands or legs, convert, by practice, his very ftumps to the moft convenient purpofes; and with thefe clumfy inftruments, perform the moft aftonifhing feats of

dexterity. We may therefore, conclude, that it is the mind alone that gives a maſter to the creation; and that, if a bear or a horſe were endowed with the ſame intellects that have been given to man, the hardneſs of an hoof, or the aukwardneſs of a paw, would be no obſtacle to their advancement in the arts of dominion or of ſocial felicity.

CHAP. VIII.

Of the Elephant.

HAVING gone through the deſcription of thoſe quadrupedes that, by reſembling each other in ſome ſtriking particular, admit of being grouped together and conſidered under one point of view, we now come to thoſe inſulated ſorts that bear no ſimilitude with the reſt, and that to be diſtinctly deſcribed muſt be ſeparately conſidered.

The foremoſt of theſe, and in every reſpect the nobleſt quadrupede in nature, is the elephant, not leſs remarkable for its ſize than its docility and underſtanding. All hiſtorians concur in giving it the character of the moſt ſagacious animal next to man; and yet, were we to take our idea of its capacity from its outward appearance, we ſhould be led to conceive very meanly of his abilities. The elephant, at firſt view, preſents the ſpectator with an enormous maſs of fleſh that ſeems ſcarcely animated. Its huge body, covered with a callous hide, without hair; its large miſ-ſhapen legs, that ſeem ſcarcely formed for motion; its little eyes, large ears, and long trunk; all give it an air of extreme ſtupidity. But our prejudices will ſoon

ſubſide when we come to examine its hiſtory; they will even ſerve to encreaſe our ſurprize when we conſider the various advantages it derives from ſo clumſy a conformation.

The elephant is ſeen from ſeven to no leſs than fifteen feet high. Whatever care we take to imagine a large animal beforehand, yet the firſt ſight of this huge creature never fails to ſtrike us with aſtoniſhment, and in ſome meaſure to exceed our idea. Having been uſed to ſmaller animals, we have ſcarce any conception of its magnitude; for a moving column of fleſh, fourteen feet high, is an object ſo utterly different from thoſe we are conſtantly preſented with, that to be conceived it muſt be actually ſeen. Such, I own, were the ſuggeſtions that naturally aroſe to me when I firſt ſaw this animal, and yet for the ſight of which I had taken care to prepare my imagination. I found my ideas fall as ſhort of its real ſize as they did of its real figure; neither the pictures I had ſeen, nor the deſcriptions I had read, giving me adequate conceptions of either.

It would, therefore, be impoſſible to give an idea of this animal's figure by a deſcription; which, even aſſiſted by the art of the engraver, will but confuſedly repreſent the original. In general it may be obſerved, that the forehead is

very high and riſing, the ears very large and dependant, the eyes extremely ſmall, the proboſcis, or trunk, long, the body round and full, the back riſing in an arch, and the whole animal ſhort in proportion to its height. The feet are round at the bottom; on each foot there are five flat horny riſings, which ſeem to be the extremities of the toes, but do not appear outwardly. The hide is without hair, full of ſcratches and ſcars, which it receives in its paſſage through thick woods and thorny places. At the end of the tail there is a tuft of hair, a foot and a half long. The female is leſs than the male, and the udder is between the fore-legs. But a more accurate, as well as a more entertaining deſcription of the parts, will naturally occur in the hiſtory of their uſes.

Of all quadrupedes, the elephant is the ſtrongeſt, as well as the largeſt; and yet, in a ſtate of nature, it is neither fierce nor formidable *. Mild, peaceful, and brave, it never abuſes its power or its ſtrength, and only uſes its force for its own protection, or that of its community. In its native deſarts, the elephant is ſeldom ſeen alone, but appears to be a ſocial

* I have extracted the greateſt part of this deſcription from Mr. Buffon. Where I add, I mark with commas, "thus."

friendly creature. The oldeſt of the company conducts the band; that which is next in ſeniority brings up the rear. The young, the weak, and the ſickly, fall into the center; while the females carry their young, and keep them from falling by means of their trunks. They maintain this order only in dangerous marches, or when they deſire to feed in cultivated grounds; they move with leſs precaution in the foreſts and ſolitudes; but without ever ſeparating, or removing ſo far aſunder as to be incapable of lending each other any requiſite aſſiſtance. Nothing can be more formidable than a drove of elephants as they appear at a diſtance in an African landſcape; wherever they march, the foreſts ſeem to fall before them; in their paſſage, they bear down the branches upon which they feed; and, if they enter into an incloſure, they deſtroy all the labours of the huſbandman in a very ſhort time. Their invaſions are the more diſagreeable as there is no means of repelling them; ſince it would require a ſmall army to attack the whole drove when united. It now and then happens that one or two is found lingering behind the reſt, and it is againſt theſe that the art and force of the hunters are united; but an attempt to moleſt the whole body would certainly be fatal. They

go forward directly againſt him who offers the inſult, ſtrike him with their tuſks, ſeize him with their trunks, fling him into the air, and then trample him to pieces under their feet. But they are thus dreadful only when offended, and do no manner of perſonal injury when ſuffered to feed without interruption. It is even ſaid that they are mindful of injuries received; and, when once moleſted by man, ſeek all occaſions for the future to be revenged; they ſmell him with their long trunks at a diſtance; follow him with all their ſpeed upon the ſcent; and, though ſlow to appearance, they are ſoon able to come up with and deſtroy him.

In their natural ſtate, they delight to live along the ſides of rivers, to keep in the deepeſt vales, to refreſh themſelves in the moſt ſhady foreſts and watery places. They cannot live far from the water; and they always diſturb it before they drink. They often fill their trunk with it, either to cool that organ, or to divert themſelves by ſpurting it out like a fountain. They are equally diſtreſſed by the extremes of heat and cold; and, to avoid the former, they frequently take ſhelter in the moſt obſcure receſſes of the foreſt, or often plunge into the water, and even ſwim from the continent into iſlands ſome leagues diſtant from the ſhore.

Their chief food is of the vegetable kind, for the loath all kind of animal diet. When one among their number happens to light upon a ſpot of good paſture, he calls the reſt, and invites them to ſhare in the entertainment; but it muſt be a very copious paſture indeed that can ſupply the neceſſities of the whole band. As with their broad and heavy feet they ſink deep wherever they go, they deſtroy much more than they devour; ſo that they are frequently obliged to change their quarters, and to migrate from one country to another. The Indians and Negroes, who are often incommoded by ſuch viſitants, do all they can to keep them away, making loud noiſes, and large fires round their cultivated grounds; but theſe precautions do not always ſucceed; the elephants often break through their fences, deſtroy their whole harveſt, and overturn their little habitations. When they have ſatisfied themſelves, and trod down or devoured whatever lay in their way, they then retreat into the woods in the ſame orderly manner in which they made their irruption.

Such are the habits of this animal conſidered in a ſocial light; and, if we regard it as an individual, we ſhall find its powers ſtill more extraordinary. With a very aukwark appearance,

it possesses all the senses in great perfection, and is capable of applying them to more useful purposes than any other quadrupede. The elephant, as we observed, has very small eyes, when compared to the enormous bulk of its body. But, though their minuteness may at first sight appear deformed, yet, when we come to examine them, they are seen to exhibit a variety of expression, and to discover the various sensations with which it is moved. It turns them with attention and friendship to its master; it seems to reflect and deliberate; and as its passions slowly succeed each other, their various workings are distinctly seen.

The elephant is not less remarkable for the excellence of its hearing. Its ears are extremely large, and greater in proportion than even those of an ass. They are usually dependent; but it can readily raise and move them. They serve also to wipe its eyes, and to protect them against the dust and flies that might otherwise incommode them. It appears delighted with music, and very readily learns to beat time, to move in measure, and even to join its voice to the sound of the drum and the trumpet.

This animal's sense of smelling is not only exquisite, but it is in a great measure pleased with the same odours that delight mankind.

The elephant gathers flowers with great pleaſure and attention; it picks them up one by one, unites them into a noſegay, and ſeems charmed with the perfume. The orange flower ſeems to be particularly grateful both to its ſenſe of taſte and ſmelling; it ſtrips the tree of all its verdure, and eats every part of it, even to the branches themſelves. It ſeeks in the meadows the moſt odoriferous plants to feed upon; and in the woods it prefers the coco, the banana, the palm, and the ſago tree, to all others. As the ſhoots of theſe are tender and filled with pith; it eats not only the leaves and the fruits, but even the branches, the trunk, and the whole plant to the very roots.

But it is in the ſenſe of touching that this animal excel all others of the brute creation, and perhaps even man himſelf. The organ of this ſenſe lies wholly in the trunk, which is an inſtrument peculiar to this animal, and that ſerves it for all the purpoſes of an hand. The trunk, is, properly ſpeaking, only the ſnout lengthened out to a great extent, hollow like a pipe, and ending in two openings, or noſtrils, like thoſe of a hog. An elephant of fourteen feet high has the trunk about eight feet long and five feet and an half in circumference at the mouth, where it is thickeſt. It is hollow

all along, but with a partition running from one end of it to the other; ſo that though outwardly it appears like a ſingle pipe, it is inwardly divided into two. This fleſhy tube is compoſed of nerves and muſcles, covered with a proper ſkin of a blackiſh colour, like that of the reſt of the body. It is capable of being moved in every direction, of being lengthened and ſhortened, of being bent or ſtreightened, ſo pliant as to embrace any body it is applied to, and yet ſo ſtrong that nothing can be torn from the gripe. To aid the force of this graſp, there are ſeveral little eminences, like a caterpillar's feet, on the underſide of this inſtrument, which without doubt contribute to the ſenſibility of the touch as well as to the firmneſs of the hold. Through this trunk the animal breathes, drinks, and ſmells, as through a tube; and at the very point of it, juſt above the noſtrils, there is an extenſion of the ſkin, about five inches long, in the form of a finger, and which in fact anſwers all the purpoſes of one; for, with the reſt of the extemity of the trunk, it is capable of aſſuming different forms at will, and conſequently of being adapted to the minuteſt objects. By means of this, the elephant can take a pin from the ground, untie the knots of a rope, unlock a door, and even write with

a pen. "I have myſelf ſeen," ſays Ælian, "an elephant writing Latin characters on a board, in a very orderly manner, his keeper only ſhewing him the figure of each letter. While thus employed, the eyes might be obſerved ſtudiouſly caſt down upon the writing, and exhibiting an appearance of great ſkill and erudition." It ſometimes happens that the object is too large for the trunk to graſp; in ſuch a caſe the elephant makes uſe of another expedient as admirable as any of the former. It applies the extremity of the trunk to the ſurface of the object, and, ſucking up its breath, lifts and ſuſtains ſuch a weight as the air in that caſe is capable of keeping ſuſpended. In this manner this inſtrument is uſeful in moſt of the purpoſes of life; it is an organ of ſmelling, of touching, and of ſuction; it not only provides for the animal's neceſſities and comforts, but it alſo ſerves for its ornament and defence.

But, though the elephant be thus admirably ſupplied by its trunk, yet, with reſpect to the reſt of its conformation, it is unwieldy and helpleſs. The neck is ſo ſhort that it can ſcarce turn the head, and muſt wheel round in order to diſcover an enemy from behind. The hunters that attack it upon that quarter, generally thus eſcape the effects of its indignation; and

find time to renew their aſſaults while the elephant is turning to face them. The legs are, indeed not ſo inflexible as the neck, yet they are very ſtiff aud bend not without difficulty. Thoſe before ſeem to be longer than the hinder; but, upon being meaſured, are found to be ſomething ſhorter. The joints, by which they bend, are nearly in the middle, like the knee of a man; and the great bulk which they are to ſupport makes their flexure ungainly. While the elephant is young, it bends the legs to lie down or to riſe; but when it grows old, or ſickly this is not performed without human aſſiſtance; and it becomes, conſequently, ſo inconvenient, that the animal chuſes to ſleep ſtanding. The feet, upon which theſe maſſy colums are ſupported, form a baſe ſcarce broader than the legs they ſuſtain. The are divided into five toes, which are covered beneath the ſkin, and none of which appear to the eye; a kind of protuberance like claws are only obſerved, which vary in number from three to five. The apparent claws vary; the internal toes are conſtantly the ſame. The ſoal of the foot is furniſhed with a ſkin as thick and hard as horn, and which completely covers the whole under part of the foot.

To the reſt of the elephant's incumbrances may

be added its enormous tuſks, which are unſerviceable for chewing, and are only weapons of defence. Theſe, as the animal grows old, become ſo heavy, that it is ſometimes obliged to make holes in the walls of its ſtall to reſt them in, and eaſe itſelf of the fatigue of their ſupport. It is well known to what an amazing ſize theſe tuſks grow; they are two in number, proceeding from the upper jaw, and are ſometimes found above ſix feet long. Some have ſuppoſed them to be rather the horns than the teeth of this animal; but, beſides their greater ſimilitude to bone than to horn, they have been indiſputably found to grow from the upper jaw, and not from the frontal bone, as ſome have thought proper to aſſert *. Some alſo have aſſerted, that theſe tuſks are ſhed in the ſame manner as the ſtag ſheds its horns; but it is very probable, from their ſolid conſiſtence, and from their accidental defects, which often appears to be the effect of a ſlow decay, that they are as fixt as the teeth of other animals are generally found to be. Certain it is that the elephant never ſheds them in a domeſtic ſtate, but keeps them till they become inconvenient and cumbrous to the laſt degree. An account of uſes to which theſe

* See Mr. Daubenton's deſcription of the ſkeleton of this animal.

teeth are applied, and the manner of chusing the best ivory, belongs rather to a history of the arts than of nature.

This animal is equally singular in other parts of its conformation; the lips and the tongue in other creatures serve to suck up and direct their drink or their food; but in the elephant they are totally inconvenient for such purposes; and it not only gathers its food with its trunk, but supplies itself with water by the same means. When it eats hay, as I have seen it frequently, it takes up a small wisp of it with the trunk, turns and shapes it with that instrument for some time, and then directs it into the mouth, where it is chewed by the great grinding teeth, that are large in proportion to the bulk of the animal. This pacquet, when chewed, is swallowed, and never ruminated again as in cows or sheep, the stomach and intestines of this creature more resembling those of a horse. Its manner of drinking is equally extraordinary. For this purpose, the elephant dips the end of its trunk into the water, and sucks up just as much as fills that great fleshy tube completely. It then lifts up its head with the trunk full, and turning the point into its mouth, as if it intended to swallow trunk and all, it drives the point below the opening of the wind-pipe. The trunk being

in this position and still full of water, the elephant then blows strongly into it at the other end, which forces the water it contains into the throat, down which it is heard to pour with a loud gurgling noise, which continues till the whole is blown down. From this manner of drinking, some have been led into an opinion that the young elephant sucks, with its trunk and not with its mouth; this, however, is a fact which no traveller has hitherto had an opportunity of seeing, and it must be referred to some future accident to determine.

The hide of the elephant is as remakable as any other part. It is not covered over with hair as in the generality of quadrupedes, but is nearly bare. Here and there indeed, a few bristles are seen growing in the scars and wrinkles of the body, and very thinly scattered over the rest of the skin; but in general the head is dry, rough, and wrinkled, and resembling more the bark of an old tree than the skin of an animal. This grows thicker every year; and, by a constant addition of substance, it at length contracts that disorder well known by the name of the elephantiasis, or Arabian leprosy; a disease to which man, as well as the elephant, is often subject. In order to prevent this, the Indians rub the elephant with oil, and frequently bathe

it to preserve its pliancy. To the inconveniences of this disorder is added another, arising from the great sensibility of those parts that are not callous. Upon these the flies settle in great abundance, and torment this animal unceasingly; to remedy which, the elephant tries all its arts; uses not only its tail and trunk in the natural manner to keep them off, but even takes the branch of a tree, or a bundle of hay, to strike them off with. When this fails, it often gathers up the dust with its trunk, and thus covers all the sensible places. In this manner it has been seen to dust itself several times a day, and particularly upon leaving the bath.

Water is as necessary to this animal as food itself. When in a state of nature, the elephant rarely quits the banks of the river, and often stands in water up to the belly. In a state of servitude, the Indians take equal care to provide a proper supply; they wash it with great address; they give it all the conveniences for lending assistance to itself; they smooth the skin with a pumice-stone, and then rub it over with oils, essences, and odours.

It is not to be wondered at that an animal furnished with so many various advantages, both of strength, sagacity, and obedience, should be taken into the service of man. We accord-

ingly find that the elephant, from time immemorial, has been employed either for the purpofes of labour, of war, or of oftentation; to encreafe the grandeur of eaftern princes, or to extend their dominions. We have hitherto been defcribing this animal in its natural ftate; we now come to confider it in a different view, as taken from the foreft and reduced to human obedience. We are now to behold this brave harmlefs creature as learning a leffon from mankind, and inftructed by him in all the arts of war, maffacre, and devaftation. We are now to behold this half reafoning animal led into the field of battle, and wondering at thofe tumults and that madnefs which he is compelled to encreafe. The elephant is a native of Africa and Afia, being found neither in Europe nor America. In Africa he ftill retains his natural liberty. The favage inhabitants of that part of the world, inftead of attempting to fubdue this powerful creature to their neceffities, are happy in being able to protect themfelves from his fury. Formerly, indeed, during the fplendour of the Carthaginian empire, elephants were ufed in their wars; but this was only a tranfitory gleam of human power in that part of the globe; the natives of Africa have long fince degenerated, and the elephant is only known among them

from his devastations. However, there are no elephants in the northern parts of Africa at present, there being none found on this side of Mount Atlas. It is beyond the river Senegal that they are to be met with in great numbers, and so down to the Cape of Good Hope, as well as in the heart of the country. In this extensive region they appear to be more numerous than in any other part of the world. They are there less fearful of man: less retired into the heart of the forests, they seem to be sensible of his impotence and ignorance; and often come down to ravage his little labours. They treat him with the same haughty disdain which they shew to other animals, and consider him as a mischievous little being, that fears to oppose them openly.

But, although these animals are most plentiful in Africa, it is only in Asia that the greatest elephants are found, and rendered subservient to human command. In Africa, the largest do not exceed ten feet high; in Asia they are found from ten to fifteen. Their price encreases in proportion to their size; and when they exceed a certain bulk, like jewels, their value then rises as the fancy is pleased to estimate.

The largest are entirely kept for the service

of princes; and are maintained with the utmoſt magnificence, and at the greateſt expence. The uſual colour of the elephant is a duſky black, but ſome are ſaid to be white; and the price of one of theſe is ineſtimable. Such a one is peculiarly appropriated for the monarch's own riding; he is kept in a palace, attended by the nobles, and almoſt adored by the people *. Some have ſaid that theſe white elephants are larger than the reſt †; others aſſert, that they are leſs; and ſtill others entirely doubt their exiſtence.

As the art of war is but very little improved in Aſia, there are few princes of the Eaſt who do not procure and maintain as many elephants as they are able, and place great confidence on their aſſiſtance in an engagement. For this purpoſe, they are obliged to take them wild in their native foreſts, and tame them; for the elephant never breeds in a ſtate of ſervitude. It is one of the moſt ſtriking peculiarities in this extraordinary creature, that his generative powers totally fail when he comes under the dominion of man; as if he ſeemed unwilling to propagate a race of ſlaves, to encreaſe the pride of his conqueror. There is, perhaps, no other quadrupede that will not breed in its own native climate, if

* P. Vincent Marie. † P. Tachard.

indulged with a moderate ſhare of freedom; and we know, that many of them will copulate in every climate. The elephant alone has never been ſeen to breed; and though he has been reduced under the obedience of man for ages, the duration of pregnancy, in the female *, ſtill remains a ſecret. Ariſtotle, indeed, aſſerts, that ſhe goes two years with young; that ſhe continues to ſuckle her young for three years, and that ſhe brings forth but one at a time: but he does not inform us of the manner in which it was poſſible for him to have his information. From authorities equally doubtful, we learn, that the little one is about as large as a wild boar, the inſtant it is brought forth; that its tuſks do not yet appear; but that all the reſt of its teeth are apparent; that, at the age of ſix months, it it as large as an ox, and its tuſks pretty well grown; and that it continues, in this manner, for near thirty years, advancing to maturity. All this is doubtful; but it is certain, that, in

* Multis perſuaſum eſt Elephantem non brutorum ſed hominum more coire. Quod retro mingit non dubitatur. Sed ipſe vidi marem hujuſce ſpeciei, in noſtri regis ſtabulis ſuper fæmellam itidem incluſam quadrupedum more ſilientem, pene paululum incurvato ſed ſufficienter recto.

order to recruit the numbers which are consumed in war, the princes of the East are every year obliged to send into the forests, and to use various methods to procure a fresh supply. Of all these numerous bands, there is not one that has not been originally wild ; nor one that has not been forced into a state of subjection. Men themselves are often content to propagate a race of slaves, that pass down in this wretched state through successive generations ; but the elephant, under subjection, is unalterably barren ; perhaps from some physical causes, which are as yet unknown.

The Indian princes having vainly endeavoured to multiply the breed of elephants, like that of other animals, have been, at last, content to separate the males from the females, to prevent those accesses of desire, which debilitated, without multiplying the species. In order to take them wild in the woods, a spot of ground is fixed upon, which is surrounded with a strong pallisade. This is made of the thickest and the strongest trees ; and strengthened by cross bars, which give firmness to the whole. The posts are fixed at such distances from each other, that a man can easily pass between them ; there being only one great passage left open, through which an elephant can easily come ; and

which is ſo contrived as to ſhut behind, as ſoon as the beaſt is entered. To draw him into this encloſure, it is neceſſary firſt to find him out in the woods; and a female elephant is conducted along into the heart of the foreſt, where it is obliged by its keeper to cry out for the male. The male very readily anſwers the cry, and haſtens to join her; which the keeper perceiving, obliges her to retreat, ſtill repeating the ſame cry, until ſhe leads the animal into the encloſure already deſcribed, which ſhuts the moment he is entered. Still, however, the female proceeds calling, and inviting, while the male proceeds forward in the encloſure, which grows narrower all the way, and until the poor animal finds himſelf completely ſhut up, without the power of either advancing or retreating; the female, in the mean time, being let out by a private way, which ſhe has been previouſly accuſtomed to. The wild elephant, upon ſeeing himſelf entrapped in this manner, inſtantly attempts to uſe violence; and, upon ſeeing the hunters, all his former deſires only turn to fury. In the mean time, the hunters, having fixed him with cords, attempt to ſoften his indignation, by throwing buckets of water upon him in great quantities, rubbing the body with leaves, and pouring oil down his ears. Soon after

after, two tame elephants are brought, a male and a female, that careſs the indignant animal with their trunks; while they ſtill continue pouring water to refreſh it. At laſt, a tame elephant is brought forward, of that number which is employed in inſtructing the new comers, and an officer riding upon it, in order to ſhew the late captive that it has nothing to fear. The hunters then open the encloſure; and, while this creature leads the captive along, two more are joined on either ſide of it, and theſe compel it to ſubmit. It is then tied by cords to a maſſy pillar provided for that purpoſe, and ſuffered to remain in that poſition for about a day and a night, until its indignation be wholly ſubſided. The next day it begins to be ſomewhat ſubmiſſive; and, in a fortnight, is completely tamed like the reſt. The females are taken when accompanying the males; they often come into theſe encloſures, and they ſhortly after ſerve as decoys to the reſt. But this method of taking the elephant differs, according to the abilities of the hunter; the Negroes of Africa, who hunt this animal merely for its fleſh, are content to take it in pitfalls; and often to purſue it in the defiles of a mountain, where it cannot eaſily turn, and ſo wound it from behind till it falls.

The elephant, when once tamed, becomes the most gentle and obedient of all animals. It soon conceives an attachment for the person that attends it, caresses him, obeys him, and seems to anticipate his desires. In a short time it begins to comprehend several of the signs made to it, and even the different sounds of the voice; it perfectly distinguishes the tone of command from that of anger or approbation, and it acts accordingly. It is seldom deceived in its master's voice; it receives his orders with attention, and executes them with prudence, eagerly, yet without precipitation. All its motions are regulated; and its actions seem to partake of its magnitude; being grave, majestic, and secure. It is quickly taught to kneel down, to receive its rider; it caresses those it knows with its trunk; with this salutes such as it is ordered to distinguish, and with this, as with a hand, helps to take up a part of its load. It suffers itself to be arrayed in harness; and seems to take a pleasure in the finery of its trappings. It draws either chariots, cannon, or shipping, with surprising strength and perseverance; and this with a seeming satisfaction, provided that it be not beaten without a cause, and that its master appears pleased with its exertions.

The elephant's conductor is usually mounted

upon its neck, and makes uſe of a rod of iron to guide it, which is ſometimes pointed, and at others bent into a hook. With this the animal is ſpurred forward, when dull or diſobedient; but, in general, a word is ſufficient to put the gentle creature into motion, eſpecially when it is acquainted with its conductor. This acquaintance is often perfectly neceſſary; for the elephant frequently takes ſuch an affection to its keeper, that it will obey no other: and it has been known to die for grief, when, in ſome ſudden fit of madneſs, it has killed its conductor. We are told, that one of theſe, that was uſed by the French forces in India for the drawing their cannon, was promiſed, by the conductor, a reward, for having performed ſome painful ſervice; but being diſappointed of its expectations, it ſlew him in a fury. The conductor's wife, who was a ſpectator of this ſhocking ſcene, could not reſtrain her madneſs and deſpair; but running with her two children in her arms, threw them at the elephant's feet, crying out, that ſince it had killed her huſband, it might kill her and her children alſo. The elephant, ſeeing the children at his feet, inſtantly ſtopped, and moderating its fury, took up the eldeſt with its trunk, and placing him upon its neck, adopted him for its

for its conductor, and obeyed him ever after with great punctuality.

But it is not for drawing burthens alone that the elephants are ſerviceable in war; they are often brought into the ranks, and compelled to fight in the moſt dangerous parts of the field of battle. There was a time, indeed, in India when they were much more uſed in war than at preſent. A century or two ago, a great part of the dependence of the general was upon the number and the expertneſs of his elephants; but of late, ſince war has been contented to adopt fatal inſtead of formidable arts, the elephant is little uſed, except for drawing cannon, or tranſporting proviſions. The princes of the country are pleaſed to keep a few for ornament, or for the purpoſes of removing their ſeraglios: but they are ſeldom led into a field of battle, where they are unable to withſtand the diſcharge of fire-arms, and have been often found to turn upon their employers. Still, however, they are uſed in war, in the more remote parts of the Eaſt; in Siam, in Cochin-China, in Tonquin, and Pegu. In all theſe places, they not only ſerve to ſwell the pomp of ſtate, being adorned with all the barbarian ſplendour that thoſe countries can beſtow, but they are actually led into the field of battle,

armed before with coats of mail, and loaded on the back each with a ſquare tower, containing from five combatants to ſeven. Upon its neck ſits the conductor, who goads the animal into the thickeſt ranks, and encourages it to encreaſe the devaſtation: wherever it goes, nothing can withſtand its fury; it levels the ranks with its immenſe bulk, flings ſuch as oppoſe it into the air, or cruſhes them to death under its feet. In the mean time, thoſe who are placed upon its back, combat as from an eminence, and fling down their weapons with double force, their weight being added to their velocity. Nothing, therefore, can be more dreadful, or more irreſiſtible, than ſuch a moving machine, to men unacquainted with the modern arts of war; the elephant, thus armed and conducted, raging in the midſt of a field of battle, inſpires more terror than even thoſe machines that deſtroy at a diſtance, and are often moſt fatal, when moſt unſeen. But this method of combating is rather formidable than effectual: poliſhed nations have ever been victorious over thoſe ſemi-barbarous troops that have called in the elephant to their aſſiſtance, or attempted to gain a victory by merely aſtoniſhing their oppoſers. The Romans quickly learned the art of opening their ranks, to admit the elephant;

and thus ſeparating it from aſſiſtance, quickly compelled its conductors to calm the animal's fury, and to ſubmit. It ſometimes alſo happened that the elephant became impatient of control; and, inſtead of obeying its conductor, turned upon thoſe forces it was employed to aſſiſt. In either caſe, there was a great deal of preparation to very little effect; for a ſingle elephant is known to conſume as much as forty men in a day.

At preſent, therefore, they are chiefly employed in carrying or drawing burthens, throughout the whole peninſula of India; and no animal can be more fitted by nature for this employment. The ſtrength of an elephant is equal to its bulk, for it can, with great eaſe, draw a load that ſix horſes could not remove: it can readily carry upon its back three or four thouſand weight; upon its tuſks alone it can ſupport near a thouſand: its force may alſo be eſtimated from the velocity of its motion, compared to the maſs of its body. It can go, in its ordinary pace, as faſt as a horſe at an eaſy trot; and, when puſhed, it can move as ſwiftly as a horſe at full gallop. It can travel with eaſe fifty or ſixty miles a day; and when hard preſſed, almoſt double that diſtance. It may be heard trotting on at a great diſtance; it

is easy also to follow it by the track, which is deeply impressed on the ground, and from fifteen to eighteen inches in diameter.

In India they are also put to other very disagreeable offices; for in some courts of the more barbarous princes, they are used as executioners; and this horrid task they perform with great dexterity: with their trunks they are seen to break every limb of the criminal at the word of command; they sometimes trample him to death, and sometimes impale him on their enormous tusks, as directed. In this the elephant is rather the servant of a cruel master, than a voluntary tyrant, since no other animal of the forest is so naturally benevolent and gentle; equally mindful of benefits as sensible of neglect, he contracts a friendship for his keeper, and obeys him even beyond his capacity.

In India, where they were at one time employed in launching ships, a particular elephant was directed to force a very large vessel into the water: the work proved superior to its strength, but not to its endeavours; which, however, the keeper affected to despise. "Take "away," says he, "that lazy beast, and bring "another better fitted for service." The poor animal instantly upon this redoubled its efforts, fractured its scull, and died upon the spot.

In Deli, an elephant, paſſing along the ſtreets, put his trunk into a taylor's ſhop, where ſeveral people were at work. One of the perſons of the ſhop, deſirous of ſome amuſement, pricked the animal's trunk with his needle, and ſeemed highly delighted with this ſlight puniſhment. The elephant, however, paſſed on without any immediate ſigns of reſentment; but coming to a puddle filled with dirty water, he filled his trunk, returned to the ſhop, and ſpurted the contents over all the finery upon which the taylors were then employed.

An elephant in Adſmeer, which often paſſed through the bazar or market, as he went by a certain herb-woman, always received from her a mouthful of greens. Being one day ſeized with a periodical fit of madneſs, he broke his fetters, and, running through the market, put the crowd to flight; and, among others, this woman, who in her haſte forgot a little child at her ſtall. The elephant recollecting the ſpot where his benefactreſs was accuſtomed to ſit, took up the infant gently in his trunk, and conveyed it to a place of ſafety.

At the Cape of Good Hope it is cuſtomary to hunt thoſe animals for the ſake of their teeth. Three horſemen, well mounted, and armed with lances, attack the elephant alter-

nately, each relieving the other, as they see their companion preſſed, till the beaſt is ſubdued. Three Dutchmen, brothers, who had made large fortunes by this buſineſs, determined to retire to Europe, and enjoy the fruits of their labours; but they reſolved, one day before they went, to have a laſt chace, by way of amuſement: they met with their game, and began their attack in the uſual manner; but, unfortunately, one of their horſes falling, happened to fling his rider; the enraged elephant inſtantly ſeized the unhappy huntſman with his trunk, flung him up to a vaſt height in the air, and received him upon one of his tuſks as he fell; and then turning towards the other two brothers, as if it were with an aſpect of revenge and inſult, held out to them the impaled wretch, writhing in the agonies of death.

The teeth of the elephant are what produces the great enmity between him and mankind; but whether they are ſhed, like the horns of the deer, or whether the animal be killed to obtain them, is not yet perfectly known. All we have as yet certain is, that the natives of Africa, from whence almoſt all our ivory comes, aſſure us, that they find the greateſt part of it in their foreſts; nor would, ſay they, the teeth of an elephant recompenſe them for their trouble

and danger in killing it: notwithſtanding, the elephants which are tamed by man, are never known to ſhed their tuſks; and from the hardneſs of their ſubſtance, they ſeem no way analogous to deers horns.

The teeth of the elephant are very often found in a foſſile ſtate. Some years ago, two great grinding-teeth, and part of the tuſk of an elephant, were diſcovered, at the depth of forty-two yards, in a lead-mine, in Flintſhire *.

The tuſks of the Mammouth, ſo often found foſſile in Siberia, and which are converted to the purpoſes of ivory, are generally ſuppoſed to belong to the elephant: however, the animal muſt have been much larger in that country than it is found at preſent, as thoſe tuſks are often known to weigh four hundred pounds; while thoſe that come from Africa, ſeldom exceed two hundred and fifty. Theſe enormous tuſks are found lodged in the ſandy banks of the Siberian rivers; and the natives pretend that they belong to an animal which is four times as large as the elephant.

There have lately been diſcovered ſeveral enormous ſkeletons, five or ſix feet beneath the ſurface, on the banks of the Ohio, not remote from the river Miume in America, ſeven

* Pennant's Synopſis, p. 90.

hundred miles from the ſea-coaſt. Some of the tuſks are near ſeven feet long; one foot nine inches in circumference at the baſe, and one foot near the point; the cavity at the root or baſe, nineteen inches deep. Beſides their ſize, there are yet other differences: the tuſks of the true elephant have ſometimes a very ſlight lateral bend; theſe have a larger twiſt, or ſpiral curve, towards the ſmaller end: but the great and ſpecific difference conſiſts in the ſhape of the grinding-teeth; which, in theſe newly found, are faſhioned like the teeth of a carnivorous animal; not flat and ribbed tranſverſely on their ſurface, like thoſe of the modern elephant, but furniſhed with a double row of high and conic proceſſes, as if intended to maſticate, not to grind their food. A third difference is in the thigh bone, which is of a great diſproportionable thickneſs to that of the elephant; and has alſo ſome other anatomical variations. Theſe foſſile bones have been alſo found in Peru and the Brazils; and, when cut and poliſhed by the workers in ivory, appear, in every reſpect, ſimilar. It is the opinion of Doctor Hunter that they muſt have belonged to a larger animal than the elephant; and differing from it, in being carnivorous. But as yet this formidable

creature has evaded our ſearch; and if, indeed, ſuch an animal exiſts, it is happy for man that it keeps at a diſtance; ſince what ravage might not be expected from a creature, endued with more than the ſtrength of the elephant, and all the rapacity of the tiger!

De Seve del. Js. Taylor sculp

The Rhinoceros.

CHAP. IX.

Of the Rhinoceros.

NEXT to the elephant, the Rhinoceros is the moſt powerful of animals. It is uſually found twelve feet long, from the tip of the noſe to the inſertion of the tail; from ſix to ſeven feet high; and the circumference of its body is nearly equal to its length. It is, therefore, equal to the elephant in bulk; and if it appears much ſmaller to the eye, the reaſon is, that its legs are much ſhorter. Words can convey but a very confuſed idea of this animal's ſhape; and yet there are few ſo remarkably formed: its head is furniſhed with an horn, growing from the ſnout, ſometimes three feet and an half long; and but for this, that part would have the appearance of the head of a hog; the upper lip, however, is much longer in proportion, ends in a point, is very pliable, ſerves to collect its food, and deliver it into the mouth: the ears are large, erect, and pointed; the eyes are ſmall and piercing; the ſkin is naked, rough, knotty, and, lying upon the body in folds, after a very peculiar faſhion: there are two folds very remarkable; one above

his ſhoulders, and another over the rump: the ſkin, which is of a dirty brown colour, is ſo thick as to turn the edge of a ſcymitar, and to reſiſt a muſquet-ball: the belly hangs low; the legs are ſhort, ſtrong and thick, and the hoofs divided into three parts, each pointing forward.

Such is the general outline of an animal that appears chiefly formidable from the horn growing from it ſnout; and formed rather for war, than with a propenſity to engage. This horn, is ſometimes found from three to three feet and a half long, growing from the ſolid bone, and ſo diſpoſed, as to be managed to the greateſt advantage. It is compoſed of the moſt ſolid ſubſtance; and pointed ſo as to inflict the moſt fatal wounds. The elephant, the boar, or the buffalo, are obliged to ſtrike tranſverſely with their weapons; but the rhinoceros employs all his force with every blow; ſo that the tiger will more willingly attack any other animal of the foreſt, than one whoſe ſtrength is ſo juſtly employed. Indeed, there is no force which this terrible animal has to apprehend: defended, on every ſide, by a thick horny hide, which the claws of the lion or the tiger are unable to pierce, and armed before with a weapon that even the elephant does not chuſe

to oppose. The missioners assure us, that the elephant is often found dead in the forests, pierced with the horn of a rhinoceros; and though it looks like wisdom to doubt whatever they tell us, yet I cannot help giving credit to what they relate on this occasion, particularly when confirmed by Pliny. The combat between these two, the most formidable animals of the forest, must be very dreadful. Emanuel, king of Portugal, willing to try their strength, actally opposed them to each other; and the elephant was defeated.

But though the rhinoceros is thus formidable by nature, yet imagination has not failed to exert itself, in adding to its terrors. The scent is said to be most exquisite; and it is affirmed, that it consorts with the tiger. It is reported also, that when it has overturned a man, or any other animal, it continues to lick the flesh quite from the bone with its tongue, which is said to be extremely rough. All this, however, is fabulous: the scent, if we may judge from the expansion of the olfactory nerves, is not greater than that of an hog, which we know to be indifferent; it keeps company with the tiger, only because they both frequent watery places in the burning climates where they are bred; and as to its rough

tongue, that is so far from the truth, that no animal of near its size has so soft a one. "I have often felt it myself," says Ladvocat, in his description of this animal; "it is smooth, soft, and small, like that of a dog; and to the feel it appears as if one passed the hand over velvet. I have often seen it lick a young man's face who kept it; and both seemed pleased with the action."

The rhinoceros which was shewn at London in 1739, and described by Doctor Parsons, had been sent from Bengal. Though it was very young, not being above two years old, yet the charge of his carriage and food from India cost near a thousand pounds. It was fed with rice, sugar, and hay: it was daily supplied with seven pounds of rice, mixed with three of sugar, divided into three portions; it was given great quantities of hay and grass, which it chiefly preferred; its drink was water, which it took in great quantities. It was of a gentle disposition, and permitted itself to be touched and handled by all visitors, never attempting mischief, except when abused, or when hungry; in such a case, there was no method of appeasing its fury, but by giving it something to eat. When angry, it would jump up against the walls of its room, with great violence; and,

many

many efforts to efcape, but feldom attempted to attack it keeper, and was always fubmiffive to his threats. It had a peculiar cry, fomewhat a mixture between the grunting of a hog, and the bellowing of a calf.

The age of thefe animals is not well known; it is faid by fome, that they bring forth at three years old, and if we may reafon from analogy, it is probable they feldom live till above twenty. That which was fhewn in London, was faid, by its keeper, to be eighteen years old, and even at that age, he pretended to confider it as a young one; however, it died fhortly after, and that probably in the courfe of nature.

The Rhinoceros is a native of the defarts of Afia and Africa, and is ufually found in thofe extenfive forefts, that are frequented by the elephant and the lion. As it fubfifts entirely upon vegetable food, it is peaceful and harmlefs among its fellows of the brute creation; but, though it never provokes to combat, it equally difdains to fly. It is every way fitted for war, but refts content in the confcioufnefs of its fecurity. It is particularly fond of the prickly branches of trees, and is feen to feed upon fuch thorny fhrubs as would be dangerous to other animals, either to gather, or to fwallow. The prickly points of thefe, however, may only

ferve to give a poignant relifh to this animal's palate, and may anfwer the fame grateful ends in feafoning its banquet, that fpices do in heightening ours.

In fome parts of the kingdom of Afia, where the natives are more defirous of appearing warlike than fhewing themfelves brave, thefe animals are tamed, and led into the field to ftrike terror into the enemy; but they are always an unmanageable and reftive animal, and probably more dangerous to the employers, than thofe whom they are brought to oppofe.

The method of taking them, is chiefly watching them, till they are found either in fome moift or marfhy place, where, like hogs, they are fond of fleeping and wallowing. They then deftroy the old one with fire-arms, for no weapons, that are thrown by the force of man, are capable of entering this animal's hide. If, when the old one is deftroyed, there happens to be a cub, they feize and tame it: thefe animals are fometimes taken in pit-falls, covered with green branches, laid in thofe paths which the Rhinoceros makes in going from the foreft to the river fide.

There are fome varieties in this animal, as in moft others; fome of them are found in Africa with a double horn, one growing above

the other; this weapon, if confidered in itfelf, is one of the ftrongeft, and moft dangerous, that nature furnifhes to any part of the animal creation. The horn is entirely folid, formed of the hardeft bony fubftance, growing from the upper maxilary bone, by fo ftrong an apophyfe, as feemingly to make but one part with it. Many are the medicinal virtues that are afcribed to this horn, when taken in powder, but thefe qualities have been attributed to it, without any real foundation, and make only a fmall part of the many fables which this extraordinary animal has given rife to.

CHAP. X.

The Hippopotamos.

THE hippopotamos is an animal as large, and not less formidable than the Rhinoceros; its legs are ſhorter, and its head rather more bulky than that of the animal laſt deſcribed. We have had but few opportunities in Europe of examining this formidable creature minutely, its dimenſions, however, have been pretty well aſcertained, by a deſcription, given us by Zerenghi, an Italian ſurgeon, who procured one of them to be killed on the banks of the river Nile. By his account it appears, that this terrible animal, which chiefly reſides in the waters of that river, is above ſeventeen feet long, from the extremity of the ſnout, to the inſertion of the tail; above ſixteen feet in circumference round the body, and above ſeven feet high: the head is near four feet long, and above nine feet in circumference. The jaws open about two feet wide, and the cutting teeth, of which it hath four in each jaw, are above a foot long.

De Seve del. Js. Taylor sculp.

The Hippopotamos.

Its feet in some measure, resemble those of the elephant, and are divided into four parts. The tail is short, flat and pointed; the hide is amazing thick, and though not capable of turning a musket ball, is impenetrable to the blow of a sabre; the body is covered over with a few scattered hairs, of a whitish, colour. The whole figure of the animal is something between that of an ox and a hog, and its cry is something between the bellowing of the one, and the grunting of the other.

This animal, however, though so terribly furnished for war, seems no way disposed to make use of its prodigious strength against an equal enemy; it chiefly resides at the bottom of the great rivers and lakes of Africa; the Nile, the Niger, and the Zara; there it leads an indolent kind of life, and seems seldom disposed for action, except when excited by the calls of hunger. Upon such occasions, three or four of them are often seen at the bottom of a river, near some cataract, forming a kind of line, and seizing upon such fish as are forced down by the violence of the stream. In that element they pursue their prey with great swiftness and preseverance; they swim with much force, and remain at the bottom for thirty or forty minutes without rising to take breath. They traverse the

the bottom of the ſtream, as if walking upon land, and make a terrible devaſtation where they find plenty of prey. But it often happens, that this animal's fiſhy food is not ſupplied in ſufficient abundance, it is then forced to come upon land, where it is an awkward and unwieldy ſtranger; it moves but ſlowly, and, as it ſeldom forſakes the margin of the river, it ſinks at every ſtep it takes; ſometimes, however, it is forced, by famine, up into the higher grounds, where it commits dreadful havock among the plantations of the helpleſs natives, who ſee their poſſeſſions deſtroyed, without daring to reſt their invader. Their chief method is, by lighting fires, ſtrikes drums, and raiſing a cry to frighten it back to its favourite element; and, as it is extremely timorous upon land, they generally ſucceed in their endeavours. But if they happen to wound, or otherways irritate it too cloſely, it then becomes formidable to all that oppoſe it: it overturns whatever it meets, and brings forth all its ſtrength, which it ſeemed not to have diſcovered before that dangerous occaſion. It poſſeſſes the ſame inoffenſive diſpoſition it its favourite element, that it is found to have upon land; it is never found to attack the mariners in their boats, as they go up or down the ſtream; but ſhould

they inavertently ſtrike againſt it, or otherwiſe diſturb it repoſe, there is much danger of its ſending them, at once, to the bottom. "I have "ſeen, ſays a mariner, as we find it in Dampier, "one of theſe animals open its jaws, and ſeizing "any boat between his teeth, at once, bite and "ſink it to the bottom. I have ſeen it upon "another occaſion, place itſelf under one of our "boats, and riſing under it, overſet it with ſix "men which were in it; who, however, happily "received no other injury." Such is the great ſtrength of this animal; and from hence, probably, the imagination has been willing to match it in combat againſt others more fierce and equally formidable. The crocodile and ſhark have been ſaid to engage with it, and yield an eaſy victory; but as the ſhark is only found at ſea, and the hippopotomos never ventures beyond the mouth of freſh-water rivers, it is moſt probable that theſe engagements never occurred; it ſometimes happens, indeed, that the princes of Africa amuſe themſelves with combats, on their freſh-water lakes, between this and other formidable animals; but whether the rhinoceros or the crocodile are of this number, we have not been particularly informed. If this animal be attacked at land, and finding itſelf incapable of vengeance from

the swiftness of its enemy, it immediately returns to the river, where it plunges in head foremost, and after a short time rises to the surface, loudly bellowing, either to invite or intimidate the enemy; but though the negroes will venture to attack the shark, or the crocodile, in their natural element, and there destroy them, they are too well apprised of the force of the hippopotamos to engage it; this animal, therefore, continues the uncontrouled master of the river, and all others fly from its approach and become an easy prey.

As the hippopotomos lives upon fish and vegetables, so it is probable the flesh of terrestrial animals may be equally grateful: the natives of Africa assert, that it has often been found to devour children and other creatures that it was able to surprise upon land; yet it moves but slowly, almost ever creature, endued with a common share of swiftness, is able to escape it; and this animal, therefore, seldom ventures from the river side, but when pressed by the necessities of hunger, or of bringing forth its young.

The female always comes upon land to bring forth, and it is supposed that she seldom produces above one at a time; upon this occasion, these animals are particularly timorous, and

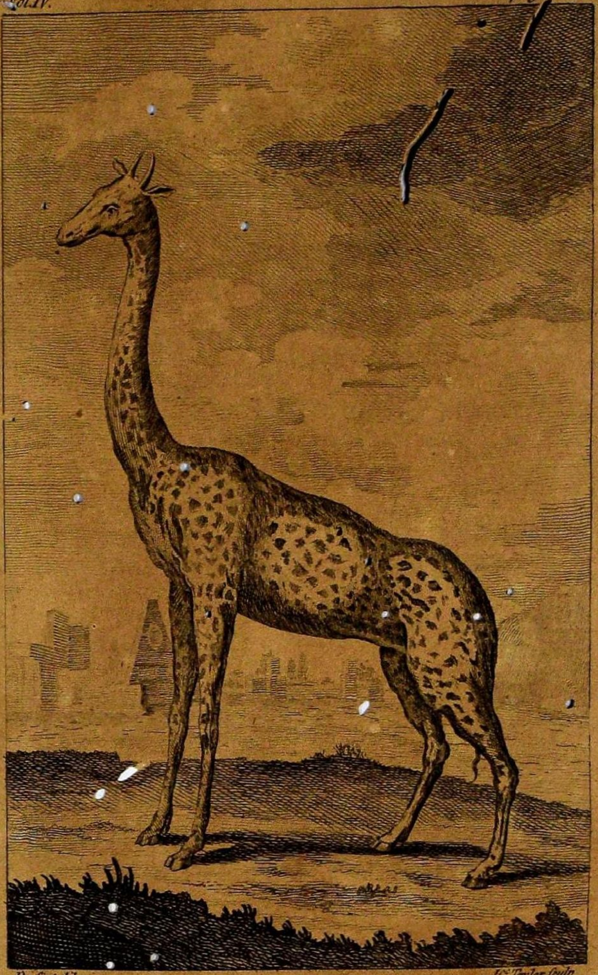
dread the approach of a terreſtrial enemy; the inſtant the parent hears the ſlighteſt noiſe, it daſhes into the ſtream, and the young one is ſeen to follow it with equal alacrity.

The young ones are ſaid to be excellent eating; but the negroes, to whom nothing that has life come amiſs, find an equal delicacy in the old. Dr. Pococke has ſeen their fleſh ſold in the ſhambles, like beef; and it is ſaid, that their breaſt, in particular, is as delicate eating as veal. As for the reſt, theſe animals are found in great numbers, and as they produce very faſt, their fleſh might ſupply the countries where they are found, could thoſe barbarous regions produce more expert huntſmen; it may be remarked, however, that this creature, which was once in ſuch plenty at the mouth of the Nile, is now wholly unknown in Lower Egypt, and is no where to be found in that river, except above the cataracts.

CHAP. XI.

The Camelopard.

WERE we to be told of an animal ſo tall, that a man on horſeback could with eaſe ride under its belly, without ſtooping, we ſhould hardly give credit to the relation; yet, of this extraordinary ſize is the camelopard, an animal that inhabits the Deſarts of Africa, and the accounts of which are ſo well aſcertained, that we cannot deny our aſſent to their authority. It is no eaſy matter to form an adequate idea of this creature's ſize, and the oddity of its formation. It exhibits ſomewhat the ſlender ſhape of the deer, or the camel, but deſtitute of their ſymmetry, or their eaſy power of motion. The head ſomewhat reſembles that of the deer, with two round horns, near a foot long, and which, it is probable, it ſheds as deer are found to do; its neck reſembles that of a horſe; its legs and feet, thoſe of the deer; but with this extraordinary difference, that the fore legs are near twice as long as the hinder. As theſe creatures



De Seve del. Is. Taylor sculp.

The Camelopard.

have been found eighteen feet high, and ten from the ground to the top of the ſhoulders, so allowing three feet for the depth of the body ſeven feet remains, which is high enough to admit a man mounted upon a middle ſized horſe. The hinder part, however, is much lower, ſo that when the animal appears ſtanding, and at reſt, it has ſomewhat the appearance of a dog ſitting, and this formation of its legs, gives it an aukward and a laborious motion; which, though ſwift, muſt yet be tireſome. For this reaſon, the camelopard is an animal very rarely found, and only finds refuge in the moſt internal deſart regions of Africa. The dimenſions of a young one, as they were accurately taken by a perſon, who examined its ſkin, that was brought from the Cape of Good Hope, were found to be as follow: the length of the head, was one foot eight inches; the height of the fore leg, from the ground to the top of the ſhoulder, was ten feet; from the ſhoulder, to the top of the head, was ſeven; the height of the hind leg, was eight feet five inches; and from the top of the ſhoulder, to the inſertion of the tail, was juſt ſeven feet long.

No animal, either from its diſpoſition, or its formation, ſeem leſs fitted for a ſtate of natural

hoſtility; its horns are blunt, and even knobbed at the ends; its teeth are made entirely for vegetable paſture; its ſkin is beautifully ſpeckled with white ſpots, upon a browniſh ground; it is timorous and harmleſs, and notwithſtanding its great ſize, rather flies from, than reſiſts the ſlighteſt enemy; it partakes very much of the nature of the camel, which it ſo nearly reſembles; it lives entirely upon vegetables, and when grazing, is obliged to ſpread its fore legs very wide, in order to reach its paſture; its motion is a kind of pace, two legs on each ſide moving at the ſame time, whereas in other animals they move tranſverſely. It often lies down with its belly to the earth, and, like the camel, has a callous ſubſtance upon its breaſt, which, when repoſed, defends it from injury. This animal was known to the ancients, but has been very rarely ſeen in Europe. One of them was ſent from the Eaſt to the emperor of Germany, in the year 1559, but they have often been ſeen tame at Grand Cairo, in Egypt; and I am told, there are two there at preſent. When ancient Rome was in its ſplendour, Pompey exhibited, at one time, no leſs than ten, upon the theatre. It was the barbarous pleaſure of the people, at that

time, to see the most terrible, and the most extraordinary animals produced in combat against each other. The lion, the lynx, the tiger, the elephant, the hippopotamos, were all let loose promiscuously, and were seen to inflict indiscriminate destruction.

CHAP.

CHAP. XII.

The Camel, and the Dromedary.

THESE names do not make two diftinct kinds, but are only given to a variety of the fame animal, which has, however, fubfifted time immemorial. The principal, and perhaps the only fenfible difference, by which thofe two races are diftinguifhed, confifts in this, that the camel has two bunches upon his back, whereas the dromedary has but one; the latter alfo, is neither fo large, nor fo ftrong, as the camel. Thefe two races, however, produce with each other, and the mixed breed formed between them is confidered the beft, the moft patient, and the moft indefatigable of all the kind.

Of the two varieties, the dromedary is, by far the moft numerous; the camel being fcarcely found except in Turky, and the countries of the Levant, while the other is found fpread over all the Defarts of Arabia, the fouthern parts of Africa, Perfia, Tartary, and a great part of the eaftern Indies. Thus, the one inhabits an immenfe tract of country, the other,

in comparifon, is confined to a province; the one inhabits the fultry countries of the torrid zone, the other delights in a warm, but not a burning climate; neither, however, can fubfift, or propagate, in the variable climates towards the north, they feem formed for thofe countries, where fhrubs are plenty and water fcarce; where they can travel along the fandy defart, without being impeded by rivers, and find food at expected diftances; fuch a country is Arabia, and this, of all others, feems the moft adapted to the fupport, and production of this animal.

The camel is the moft temperate of all animals, and it can continue to travel feveral days without drinking. In thofe vaft defarts, where the earth is every where dry and fandy, where there are neither birds nor beafts, neither infects nor vegetables, where nothing is to be feen but hills of fand and heaps of bone, there the camel travels, pofting forward, without requiring either drink or pafture, and is often found fix or feven days without any fuftenance whatfoever. Its feet are formed for travelling upon fand, and utterly unfit for moift or marfhy places; the inhabitants, therefore, find a moft ufeful affiftant in this animal, where no other could fubfift, and by its means, crofs thofe de-

ſarts with ſafety, which would be unpaſſable by any other method of conveyance.

An animal, thus formed for a ſandy and deſart region, cannot be propagated in one of a different nature. Many vain efforts have been tried to propagated the camel, in Spain; they have been tranſported into America, but have multiplied in neither. It is true, indeed, that they may be brought into theſe countries, and may, perhaps, be found to produce there, but the care of keeping them is ſo great, and the accidents to which they are expoſed, from the changeableneſs of the climate, are ſo many, that they cannot anſwer the care of keeping. In a few years alſo, they are ſeen to degenerate; their ſtrength and their patience forſake them; and inſtead of making the riches, they become the burthen of their keepers.

But it is very different in Arabia, and thoſe countries where the camel is turned to uſeful purpoſes. It is there conſidered as a ſacred animal, without whoſe help, the natives could neither ſubſiſt, traffick, or travel; its milk makes a part of their nouriſhment; they feed upon its fleſh particularly when young; they clothe themſelves with its hair, which it is ſeen to molt regularly once a year, and if they fear an enemy

invading enemy, their camels ſerve them in flight, and in a ſingle day they are known to travel above an hundred miles. Thus, by means of the camel, an Arabian finds ſafety in his deſarts; all the armies upon earth might be loſt in the purſuit of a flying ſquadron of this country, mounted upon their camels, and taking refuge in ſolitudes where nothing interpoſes to ſtop their flight, or to force them to wait the invader. Nothing can be more dreary than the aſpect of theſe ſandy plains, that ſeem entirely forſaken of life and vegetation: wherever the eye turns, nothing is preſented but a ſteril and duſty ſoil, ſometimes torn up by the winds, and moving in great waves along, which, when viewed from an eminence, reſemble leſs the earth than the ocean; here and there a few ſhrubs appear that only teach us to wiſh for the grove that remind us of the ſhade in theſe ſultry climates, without affording its refreſhment; the return of morning, which, in other places, carries an idea of chearfulneſs, here ſerves only to enlighten the endleſs and dreary waſte, and to preſent the traveller with an unfiniſhed proſpect of his forlorn ſituation; yet in this chaſm of nature, by the help of the camel, the Arabian finds ſafety and ſubſiſtence. There are here and there

found ſpots of verdure, which, though, remote from each other, are, in a manner, approximated by the labour and induſtry of the camel. Thus theſe deſarts, which preſent the ſtranger with nothing but objects of danger and ſterility, afford the inhabitant protection, food, and liberty. The Arabian lives independent and tranquil in the midſt of his ſolitudes; and, inſtead of conſidering the vaſt ſolitudes ſpread round him as a reſtraint upon his happineſs, he is, by experience, taught to regard them as the ramparts of his freedom.

The camel is eaſily inſtructed in the methods of taking up and ſupporting his burthen; their legs, a few days after they were produced, are bent under their belly; they are in this manner loaded, and taught to riſe; their burthen is every day thus encreaſed, by inſenſible degrees, till the animal is capable of ſupporting a weight adequate to its force: the ſame care is taken in making them patient of hunger and thirſt: while other animals receive their food at ſtated times, the camel is reſtrained for days together, and theſe intervals of famine are encreaſed in proportion as the animal ſeems capable of ſuſtaining them. By this method of education, they live five or ſix days without food or water; and their ſtomach is formed moſt admirably by

nature, to fit them for long abſtinence: beſides the four ſtomachs, which all animals have, that chew the cud, (and the camel is of the number) it has a fifth ſtomach, which ſerves as a reſervoir, to hold a greater quantity of water than the animal has an immediate occaſion for. It is of a ſufficient capacity to contain a large quantity of water, where the fluid remains without corrupting, or without being adulterated by the other aliments: when the camel finds itſelf preſſed with thirſt, it has here an eaſy reſource for quenching it; it throws up a quantity of this water by a ſimple contraction of the muſcles, into the other ſtomachs, and this ſerves to macerate its dry and ſimple food; in this manner, as it drinks but ſeldom, it takes in a large quantity at a time, and travellers, when ſtraightened for water, have been often known to kill their camels for that which they expected to find within them.

In Turky, Perſia, Arabia, Barbary, and Egypt, their whole commerce is carried on by means of camels, and no carriage is more ſpeedy, and none leſs expenſive in theſe countries. Merchants and travellers unite themſelves into a body, furniſhed with camels, to ſecure themſelves from the inſults of the robbers that infeſt the countries in which they

live. This aſſemblage is called a caravan, in which the numbers are ſometimes known to amount to above ten thouſand, and the number of camels is often greater than thoſe of the men: each of theſe animals is loaded according to his ſtrength, and he is ſo ſenſible of it himſelf, that when his burthen is too great, he remains ſtill upon his belly, the poſture in which he is loaden, refuſing to riſe, till his burthen be leſſened or taken away. In general, the large camels are capable of carrying a thouſand weight, and ſometimes twelve hundred; the dromedary from ſix to ſeven. In theſe trading journies, they travel but ſlowly, their ſtages are generally regulated, and they ſeldom go above thirty, or at moſt about five and thirty miles a day. Every evening, when they arrive at a ſtage, which is uſually ſome ſpot of verdure, where water and ſhrubs are in plenty, they are permitted to feed at liberty; they are then ſeen to eat as much in an hour, as will ſupply them for twenty-four, they ſeem to prefer the coarſeſt weeds to the ſofteſt paſture, the thiſtle, the nettle, the caſia, and other prickly vegetables, are their favourite food; but their drivers take care to ſupply them with a kind of paſte compoſition, which ſerves as a more permanent nouriſhment. As theſe animals

have often gone the ſame track, they are ſaid to know their way preciſely, and to purſue their paſſage when their guides are utterly aſtray: when they come within a few miles of their baiting-place, in the evening, they ſagaciouſly ſcent it at a diſtance, and encreaſing their ſpeed, are often ſeen to trot with vivacity to their ſtage.

The patience of this animal is moſt extraordinary; and it is probable, that its ſuffering are great, for when it is loaded, it ſends forth moſt lamentable cries, but never offers to reſiſt the tyrant that oppreſſes it. At the ſlighteſt ſign, it bends its knees and lies upon its belly, ſuffering itſelf to be loaded in this poſition; by this practice the burthen is more eaſily laid upon it, than if lifted up while ſtanding; at another ſign it riſes with its load, and the driver getting upon its back, between the two panniers, which, like hampers, are placed upon each ſide, he encourages the camel to proceed with his voice and with a ſong. In this manner the creature proceeds contentedly forward, with a ſlow uneaſy walk, of about four miles an hour, and when it comes to its ſtage, lies down to be unloaded, as before.

Mr. Buffon ſeems to conſider the camel to be the moſt domeſticated of all other creatures,

and to have more marks of the tyranny of man imprinted on its form. He is of opinion, that this animal is not now to be found in a ſtate of nature, that the humps on its back, the calofities upon its breaſt, and its legs, and even the great reſervoir for water, are all marks of long ſervitude and domeſtic conſtraint. The deformities he ſuppoſes to be perpetuated by generation, and what at firſt was accident at laſt becomes nature. However this be, the humps upon the back grow large in proportion as the animal is well fed, and if examined, they will be found compoſed of a ſubſtance not unlike the udder of a cow.

The inhabitants generally leave but one male to wait on ten females, the reſt they caſtrate; and though they thus become weaker, they are more manageable and patient. The female receives the male in the ſame poſition as when theſe animals are loaded; ſhe goes with young for about a year, and, like all other great animals, produces but one at a time. The camel's milk is abundant and nouriſhing, and mixed with water makes a principal part of the beverage of the Arabians. Theſe animals begin to engender at three years of age, and they ordinarily live from forty to fifty years. The genital part of the male reſemble that of

the bull, but is placed pointing backwards, so that its urine seems to be ejected in the manner of the female. This, as well as the dung, and almost every part of this animal, is converted to some useful purpose by the keepers. Of the urine sal ammoniac is made; and of the dung, litter for the horses, and fire, for the purpose of dressing their victuals. Thus, this animal alone seems to comprise within itself, a variety of qualities, any one of which serves to render other quadrupedes absolutely necessary for the welfare of man; like the elephant, it is manageable and tame; like the horse, it gives the rider security; it carries greater burthens than the ox, or the mule; and its milk is furnished in as great abundance as that of the cow; the flesh of the young ones is supposed to be as delicate as veal; their hair is more beautiful, and more in request than wool; while even of its very excrements, no part is useless.

CHAP. XIV.

The Lama.

As almoſt all the quadrupedes of America are ſmaller than the reſembling ones of the ancient continent, ſo the Lama, which may be conſidered as the camel of the new world, is every way leſs than that of the old. This animal, like that deſcribed in the former chapter, ſtands high upon its legs, has a long neck, a ſmall head, and reſembles the camel, not only in its natural mildneſs, but its aptitude for ſervitude, its moderation, and its patience. The Americans early found out its uſeful qualities, and availed themſelves of its labours: like the camel, it ſerves to carry goods over places inacceſſible to other beaſts of burthen; like that it is obedient to its driver, and often dies under, but never reſiſts his cruelty.

Of theſe animals, ſome are white, others black, but they are moſtly brown; its face reſembles that of the camel, and its height is about equal to that of an aſs. They are not found in the ancient continent, but en-

entirely belong to the new; nor are they found ſpread over all America, but are found chiefly upon thoſe mountains, that ſtretch from New Spain to the Streights of Magellan. They inhabit the higheſt regions of the globe, and ſeem to require purer air than animals of a lower ſituation are found to enjoy. Peru ſeems to be the place where they are found in greateſt plenty. In Mexico, they are introduced rather as curioſities than beaſts of burthen; but in Potoſi, and other provinces of Peru, they make the chief riches of the Indians and Spaniards who rear them: their fleſh is excellent food; their hair, or rather wool, may be ſpun into beautiful cloathing, and they are capable, in the moſt rugged and dangerous ways, of carrying burthens not exceeding a hundred weight, with the greateſt ſafety. It is true indeed that they go but ſlowly, and ſeldom above fifteen miles a day; their tread is heavy, but ſure; they deſcend precipices, and find footing among the moſt craggy rocks where even men can ſcarce accompany them; they are, however, but feeble animals, and after four or five days labour, they are obliged to repoſe for a day or two. They are chiefly uſed in carrying the riches of the mines of Potoſi, and we are told that there

are above three hundred thousand of these animals in actual employ.

This animal, as was said before, is above three feet high, and the neck is three feet long, the head is small and well proportioned, the eyes large, the nose long, the lips thick, the upper divided, and the lower a little depending, like all those animals that feed upon grass, it wants the upper cutting teeth; the ears are four inches long, and move with great agility; the tail is but five inches long, it is small, strait, and a little turned up at the end; it is cloven footed, like the ox, but it has a kind of spear-like appendage behind, which assists it in moving over precipices and rugged ways; the wool on the back is short, but long on the sides and the belly; it resembles the camel in the formation of the genital parts in the male, so that it makes urine backwards; it couples also in the same manner, and though it finds much difficulty in the action, it is said to be much inclined to venery. A whole day is often passed, before the necessary business can be completed, which is spent in growling, quarrelling, and spitting at each other; they seldom produce above one at a time, and their age never extends above ten or twelve years at farthest.

Though the lama is no way comparable to the camel, either for ſize, ſtrength, or perſeverance, yet the Americans find a ſubſtitute in it, with which they ſeem perfectly contented. It appears formed for that indolent race of maſters, which it is obliged to ſerve; it requires no care, nor no expence in the attending or providing for its ſuſtenance; it is ſupplied with a warm covering, and therefore does not require to be houſed; ſatisfied with vegetables and graſs, it wants neither corn nor hay to ſubſiſt it; it is not leſs moderate in what it drinks, and exceeds even the camel in temperance. Indeed, of all other creatures, it ſeems to require water leaſt, as it is ſupplied by nature with ſaliva in ſuch large quantities, that it ſpits it out on every occaſion: this ſaliva ſeems to be the only offenſive weapon that the harmleſs creature has to teſtify its reſentment. When overloaded, or fatigued, and driven on by all the torturing acts of its keeper, it falls on its belly, and pours out againſt him, a quantity of this fluid; which, though probably no way hurtful, the Indians are much afraid of. They ſay, that wherever it falls, it is of ſuch an acrimonious nature, that it will either burn the ſkin, or cauſe very dangerous eruptions.

Such are these animals in their domestic state; but as they are found wild in very great numbers, they exhibit marks of great force and agility, in their state of nature. The stag is scarcely more swift, or the goat, or the shammoy a better climber. All its shapes are more delicate and strong; its colour is tawney, and its wool is but short; in their native forests, they are gregarious animals, and are often seen in flocks of two or three hundred at a time. When they perceive a stranger, they regard him at first with astonishment, without marking any fear or surprize; but shortly, as if by common consent, they snuff up the air, somewhat like horses, and at once, by a common flight take refuge on the tops of the mountains: they are fonder of the northern than the southern side of the Andes; they often climb above the snowy tracts of the mountain, and seem vigorous in proportion to the coldness of their situation. The natives hunt the wild lama for the sake of its fleece. If the dogs surprise one upon the plain, they are generally successful; but if once the lama obtains the rocky precipice of the mountain, the hunters are obliged to desist in their pursuit.

The lama seems to be the largest of the camel kind in America; there are others, which are

called guanacoes and pacos, that are ſmaller and weaker, but endued with the ſame nature, and formed pretty much in the ſame manner. They ſeem to bear the ſame proportions to each other, that the horſe does to the aſs, and are employed with the ſame degree of ſubordination. The wool, however, of the paco, ſeems to be the moſt valuable, and it is formed into ſtuffs, not inferior to ſilk, either in price or beauty. The natural colour of the paco is that of a dried roſe-leaf; the manufacturers ſeldom give its wool any other dye, but form it into quilts and carpets, which exceed thoſe from the Levant. This manufacture forms a very conſiderable branch of commerce in South America, and probably too, might be extended to Europe, were the beauty, and the durability of what is thus wrought up ſufficiently known.

C H A P. XV.

The Nyl-ghau.

THIS animal, the name of which is pronounced nylgaw is a native of India, and has but lately been imported into Europe; it ſeems to be of a middle nature, between the cow and the deer, and carries the appearance of both in its form. In ſize, it is as much ſmaller than the one, as it is larger than the other; its body, horns, and tail, are not unlike thoſe of a bull; and the head, neck, and legs, are very like thoſe of a deer. The colour, in general, is aſh or grey, from a mixture of black hairs and white; all along the ridge or edge of the neck, the hair is blacker, larger, and more erect, making a ſhort thin and upright mane. Its horns are ſeven inches long, they are ſix inches round at the foot, growing ſmaller degrees, they terminate in a blunt point. The bluntneſs of theſe, together with the form of its head and neck, might incline us to ſuppoſe it was of the deer kind; but, as it never ſheds its horns, it has a greater affinity to the cow.

From the disposition of that brought over to this country, which has been very accurately and minutely described by Dr. Hunter, their manners were harmless and gentle. Although in its native wildness, it is said to be fierce and vicious, this seemed pleased with every kind of familiarity, and always licked the hand that stroked, or gave it bread, and never once attempted to use its horns offensively; it seemed to have much dependance on its organs of smell, and snuffed keenly, and with noise, whenever any person came within sight; it did so likewise, when any food or drink was brought to it; and was so easily offended with smells, or so cautious, that it would not taste the bread which was offered, when the hand happened to smell strong of turpentine. Its manner of fighting is very particular. It was observed, at Lord Clive's, where two males were put into a little inclosure, that, while they were at a considerable distance from each other, they prepared for the attack, by falling upon their fore-knees, then they shuffled towards each other, with a quick pace, keeping still upon their fore-knees, and when they were come within some yards, they made a spring and darted against each other. The intrepidity and force with which they dart against any object, appeared by the strength with which

one of them attempted to over-turn a poor labourer who unthinkingly ſtood on the outſide of the pales of its incloſure. The Nyl-ghau, with the quickneſs of lightning, darted againſt the wood-work with ſuch violence, that he broke it to pieces, and broke off one of his horns cloſe to the root, which occaſioned the animal's death. At all the places in India where we have ſettlements, they are conſidered as rarities, and brought from the diſtant interior parts of the country. The Emperor, ſometimes, kills them in ſuch numbers, as to diſtribute quarters of them to all his omrahs; which ſhews that they are internally wild and in plenty, and eſteemed good or dilicious food. The nyl-ghaus, which have been brought to England, have been moſt, if not all of them, received from Surat or Bombay; and they ſeem to be leſs uncommon in that part of India, than in Bengal; which gives room for a conjecture, that they may be indigenous, perhaps, in the province of Guzarat, one of the moſt weſtern and the moſt conſiderable of the Hindoſtan empire, lying to the northward of Surat, and ſtretching away to the Indian ocean.

De Seve del. Isc Taylor sculp

The Brown Bear.

CHAP. XVI.

The Bear.

OF the bear, there are three different kinds, the brown bear of the Alps, the black bear of North-America, which is ſmaller, and the great Greenland, or white bear. Theſe, tho' different in their form, are no doubt of the ſame original, and owe their chief variations to food and climate. The have all the ſame habitudes, being equally carnivorous, treacherous, and cruel. It has been ſaid indeed, that the black bear of America rejects animal food, but of the contrary I am certain, as I have often ſeen the young ones, which are brought over to London, prefer fleſh to every kind of vegetable aliment.

The brown bear is properly an inhabitant of the temperate climates; the black finds ſubſiſtence in the northern regions of Europe and America, while the great white bear takes refuge in the moſt icy climates, and lives where ſcarce any other animal can find ſubſiſtence.

The brown bear * is not only ſavage but ſolitary; he takes refuge in the moſt unfrequented parts, and the moſt dangerous precipices of uninhabited mountains. It chuſes its den in the moſt gloomy parts of the foreſt, in ſome cavern that has been hollowed by time, or in the hollow of ſome old enormous tree. There it retires alone, and paſſes ſome months of the winter without proviſions, or without ever ſtirring abroad. However this animal is not entirely deprived of ſenſation like the bat, or the dormouſe, but ſeems rather to ſubſiſt upon the exuberance of it former fleſh, and only feels the calls of appetite, when the fat it had acquired in ſummer, begins to be entirely waſted away. In this manner, when the bear retires to its den, to hide for the winter, it is extremely fat, but at the end of forty or fifty days, when it comes forth to ſeek for freſh nouriſhment, it ſeems to have ſlept all its fleſh away. It is a common report, that during this time, they live by ſucking their paws, which is a vulgar error that ſcarce requires confutation. Theſe ſolitary animals couple in autumn, but the time of geſtation with the female is ſtill unknown; the female takes great care to provide a proper retreat for her young,

* Buffon.

ſhe ſecures them in the hollow of a rock, and provides a bed of hay in the warmeſt part of the den; ſhe brings forth in winter, and the young ones begin to follow her in ſpring. The male and female, by no means inhabit the ſame den; they have each their ſeparate retreat, and ſeldom are ſeen together but upon the acceſſes of genial deſire.

The voice of the bear is a kind of growl, interrupted with rage, which is often capriciouſly exerted; and tho' this animal ſeems gentle and placid to its maſter, when tamed; yet it is ſtill to be diſtruſted and managed with caution, as it is often treacherous and reſentful without a cauſe.

This animal is capable of ſome degree of inſtruction. There are few but have ſeen it dance in aukward meaſures upon its hind feet, to the voice or the inſtrument of its leader; and it muſt be confeſſed that the dancer is often found to be the beſt performer of the two. I am told, that it is firſt taught to perform in this manner, by ſetting it upon hot plates of iron, and then playing to it, while in this uneaſy ſituation.

The bear, when come to maturity, can never be tamed; it then continues in its native fierceneſs, and tho' caged, ſtill formidably im-

potent, at the approach of its keeper flies to meet him. But notwithstanding the fierceneſs of this animal, the natives in thoſe countries where it is found, hunt it with great preſeverance and alacrity. The leaſt dangerous method of taking it is by intoxicating it, by throwing brandy upon honey, which it ſeem to be chiefly fond of, and ſeeks for in the hollow of trees. In Canada, where the black bears are very common, and where their dens are made in trees, that are hollow towards the top, they are taken by ſetting fire to their retreats, which are often above thirty feet from the ground. The old one is generally ſeen firſt to iſſue from her den, and is ſhot by the hunters. The young ones, as they deſcend, are caught in a nooſe, and are either kept or killed for proviſion. Their paws are ſaid to be a great delicacy, and their hams are well enough known at the tables of the luxurious here. Their fat alſo, which ſtill preſerves a certain degree of fluidity, is ſuppoſed to be an efficacious remedy in white or indolent tumours, though probably very little ſuperior to hogs-lard.

The white Greenland bear differs greatly, both in figure and dimenſions, from thoſe already deſcribed; and though it preſerves in general the external form of its more ſouthern

De Seve del. Js.^o Taylor sculp.

The White Bear.

kindred, yet it grows to above three times the ſize. The brown bear is ſeldom above ſix feet long; the white bear is often known from twelve to thirteen. The brown bear is made rather ſtrong and ſturdy, like the maſtiff; the Greenland bear, though covered with very long hair, and apparently bulky, is nevertheleſs more ſlender, both as to the head, neck, and body, and more inclining to the ſhape of the grey-hound. In ſhort, all the variations of its figure and its colour, ſeem to proceed from the coldneſs of the climate, where it reſides, and the nature of the food it is ſupplied with.

The white bear ſeems the only animal, that by being placed in the coldeſt climate, grows larger than than thoſe that live in the temperate zones. All other ſpecies of animated nature diminiſh as they approach the poles, and ſeem contracted in their ſize, by the rigours of the ambient atmoſphere; but the bear, being unmoleſted in theſe deſolate climates, and meeting no animal, but what he can eaſily conquer, finding alſo a ſufficient ſupply of fiſhy proviſions, he grows to an enormous ſize; and as the lion is the tyrant of an African foreſt, ſo the bear remains undiſputed maſter of the icy mountains in Spitzbergen and Greenland. When our mariners land upon thoſe

ſhores, in ſuch parts as have not been frequented before, the white bears come down to view them with an aukward curioſity; they approach ſlowly, ſeeming undetermined whether to advance or retreat, and being naturally a timorous animal, they are only urged on by the conſcious experience of their former victories; however, when they are ſhot at, or wounded, they endeavour to fly, or finding that impracticable, they make a fierce and deſperate reſiſtance till they die. As they live upon fiſh and ſeals, their fleſh is too ſtrong for food, and the captors have nothing but the ſkin, to reward them, for the dangers incurred in the engagement.

The number of theſe animals that are found about the north-pole, if we conſider the ſcarcity thereof, of all other terreſtrial creatures, is very amazing. The are not only ſeen at land, but often on ice-floats, ſeveral leagues at ſea. They are often tranſported in this manner to the very ſhores of Iceland, where they no ſooner land, but all the natives are in arms to receive them. It often happens, that when a Greenlander and his wife are paddling out at ſea, by coming too near an ice-float, a white bear unexpectedly jumps into their boat, and if he does not overſet, it, ſits calmly where

he first came down, and like a passenger suffers himself to be rowed along. It is probable the poor little Greenlander is not very fond of his new guest, however he makes a virtue of necessity, and hospitably rows him to shore.

As this animal lives chiefly upon fish, seals, and dead whales, it seldom removes far from the shore. When forced by hunger, it often ventures into the deep, swims after seals, and devours whatever it can seize; it is however but a bad swimmer, and it is often hunted in this manner by boats, till it is fatigued, and at last destroyed. It often happens that a battle ensues between a bear and a morse or a whale, as the latter are more expert in their own element, they generally prove victorious. However, when the bear can find a young whale, it repays him for the danger he incurs of meeting with the parent.

CHAP. XVII.

The Badger.

THE badger's legs are ſo ſhort, that its belly ſeems to touch the ground; this however is but a deceitful appearance, as it is cauſed by the length of the hair, which is very long all over the body, and makes it ſeem much more bulky that it really is. It is a ſolitary ſtupid animal, that finds refuge, remote from man, and digs itſelf a deep hole, with great aſſiduity. It ſeems to avoid the light, and ſeldom quits its retreat by day, only ſtealing out at night to find ſubſiſtence. It burrows in the ground very eaſy, its legs being ſhort and ſtrong, and its claws, ſtiff and horny. As it continues to bury itſelf, and throw the earth behind it, to a great diſtance, and thus forms to itſelf a winding hole, at the bottom of which it remains in ſafety. As the fox is not ſo expert at digging into the earth, it often takes poſſeſſion of that which has been quitted by the badger, and ſome ſay, forces it from its retreat, by laying its excrements at the mouth of the badger's hole.

De Seve del. Js. Taylor sculp.

The Badger.

This animal, however, is not long in making itſelf a new habitation, from which it ſeldom ventures, far, as it flies but ſlowly, and can find ſafety only in the ſtrength of its retreat. When it is ſurpriſed by the dogs at ſome diſtance from its hole, it then combats with deſperate reſolution; it falls upon its back, defends itſelf on every ſide, and ſeldom dies unrevenged in the midſt of its enemies.

The badger, like the fox, is a carnivorous animal, and nothing that has life can come amiſs to it. It ſleeps the greateſt part of its time, and thus, without being a voracious feeder, it ſtill keeps fat, particularly in winter. They always keep their hole very clean, and when the female brings forth, ſhe makes a comfortable warm bed of hay, at the bottom of her hole, for the reception of her young. She brings forth in ſummer, generally to the number of three or four, which ſhe feeds at firſt with her milk, and afterwards with ſuch petty prey as ſhe can ſurpriſe. She ſeizes the young rabbets in their warren, robs birds neſts, finds out where the wild bees have laid up their honey, and brings all to her expecting brood.

The young ones when taken are eaſily tamed, but the old ſtill continues ſavage and incorrigible; the former, after a ſhort time, play with

the dogs, follow their maſter about the houſe, but ſeem of all other animals the moſt fond of the fire. They often approach it ſo cloſely, that they burn themſelves in a dangerous manner. They are ſometimes alſo ſubject to the mange, and have a gland under their tail, which ſcents pretty ſtrongly. The poor of ſome countries eat their fleſh; which, though fat, is at beſt but rank and ill taſted.

CHAP. XVIII.

The Tapir.

THERE ſeems to be a rude, but inferiour reſemblance between many animals of the old and the new world. The congar of America, reſembles the tiger in natural ferocity, tho' far inferior in its dimenſions. The lama bears ſome affinity to the camel, but is far behind it in ſtrength and utility. The tapir may be conſidered as the hippopotamos of the New Continent, but degraded both as to its ſize and ferocity.

This animal bears ſome diſtant reſemblance in its form to a mule. It has a long ſnout, which it lengthens or contracts at pleaſure. Its ears are ſmall, long, and pendant. Its neck and tail are ſhort, and it claws ſtrong and firm, of which it has four upon each foot. Its ſkin is thick, and covered with brown hair, and the natives made ſhields of it, which cannot be pierced by an arrow.

This animal may in ſome meaſure be termed amphibious, as it chiefly reſides in the water. It differs however from all others of this kind, in feeding entirely upon vegetables, and not making this element the place of its depredations. It feeds upon the paſtures by the riverſide, and as it is very timorous, the inſtant it hears the leaſt noiſe, it plunges into the ſtream. They are greatly ſought after by the natives, as their fleſh is conſidered as a delicacy, and thought by ſome not inferior to beef.

CHAP. XIX.

The Racoon.

THE racoon, which ſome authors have called the Jamaica rat, is about the ſize of a ſmall badger; its body is ſhort and bulky; its fur is fine, long, and thick, blackiſh at the ſurface, and grey towards the bottom; the noſe is rather ſhorter, and more pointed than that of a fox; the eyes large and yellow, the teeth reſembling thoſe of a dog, the tail thick, but tapering towards a point, regularly marked with rings of black, and at leaſt as long as the body; the fore-feet are much ſhorter than the hinder, both armed with five ſharp claws, with which, and his teeth, the animal makes a vigorous reſiſtance. Like the ſquirrel, it makes uſe of its paws to hold its food while eating, but it differs from the monkey kind, which uſe but one hand on thoſe occaſions, whereas the racoon and the ſquirrel, uſe both; as wanting the thumb, their paws ſingly are unfit for graſping or holding; though this animal be ſhort and bulky, it is however very active; its

De Seve del. J. Taylor sculp.

The Racoon.

pointed claws enable it to climb trees with greater facility; it runs on the trunk with the ſame ſwiftneſs that it moves upon the plain, and ſports among the moſt extreme branches with great agility, ſecurity, and eaſe; it moves forward chiefly by bounding, and though it proceeds in the oblique direction, it has ſpeed enough moſt frequently to eſcape its purſuers.

This animal is a native of the ſouthern parts of America, nor have any travellers mentioned its being found in the ancient continent. But in the climates of which it is a native; it is found in noxious abundance, particularly in Jamaica, where it keeps in the mountains, and where it often deſcends to feed upon the plantations of ſugar-cane. The planters of theſe climates conſider theſe animals as one of their greateſt miſeries; they have contrived various methods of deſtroying them, yet ſtill they propagate in ſuch numbers, that neither traps nor fire-arms can ſet them free; ſo that a ſwarm of theſe famiſhed creatures are found to do more injury in a ſingle night, than the labours of a month can repair.

But though, when wild they are thus troubleſome, in a ſtate of tameneſs no animal is more harmleſs or amuſing; they are capable of being inſtructed in various little amuſing tricks. The

racoon is playſul and cleanly, and is very eaſily ſupported; it eats of every thing that's given it, and if left to itſelf, no cat can be a better provider; it examines every corner, eats of all fleſh, either boiled or raw, eggs, fruits, or corn, inſects themſelves cannot eſcape it, and if left at liberty in a garden, it will feed upon ſnails, worms, and beetles; but it has a particular fondneſs for ſweets of every kind, and to be poſſeſſed of theſe in its wild ſtate, it incurs every danger. Though it will eat its proviſions dry, it will for choice dip them in water if it happens to be in the way; it has one peculiarity which few other animals have been found to poſſeſs, it drinks as well by lapping, like the dog, as by ſucking like the horſe.

CHAP. XX.

The Coatimondi.

THE firſt peculiarity with which this animal ſtrikes the ſpectator, is the extreme length of its ſnout, which in ſome meaſure reſembles that of the hog, but elongated to a ſupriſing degree; it bears ſome diſtant reſemblance to the animal laſt deſcribed, except that the neck and the body are longer, the fur ſhorter, and the eyes ſmaller; but its principal diſtinction, as was ſaid before, conſiſts in the ſhape of its noſe, the upper jaw being an inch longer than the lower, and the ſnout, which is moveable in every diviſion, turning up at the end. Like the racoon, it ſets up on the hinder legs with great eaſe, and in this poſition, with both paws, carries the food to its mouth.

This animal is very ſubject to eat its own tail, which is rather longer than its body, but this ſtrange appetite is not peculiar to the coati alone; the mococo, and ſome of the monkey kinds do the ſame, and ſeem to feel no pain in

wounding a part of the body ſo remote from the center of circulation.

It ſeems poſſeſt of the ſame playful qualities, and indiſcriminate appetites, with the animal deſcribed in the laſt chapter; if left at liberty in a ſtate of tameneſs, it will purſue the poultry, and deſtroy every living thing that it has ſtrength to conquer; though it is playful with its keeper, yet it ſeems obſtinately bent againſt receiving any inſtruction, and neither threats nor careſſes can induce it to practiſe any arts to which it is not naturlly inclined. When it ſleeps, it rolls itſelf up in a lump, and in that poſition often continues for fourteen or fifteen hours together.

CHAP.

De Seve del. Js. Taylor sculp

The Black Coati Mondi.

CHAP. XXI.

Of the Ant-Bear.

THERE are many animals that live upon ants in Africa and America; the pangolin or ſcaly lizard of Guinea may be conſidered among this number; but there are a greater variety in America, which makes thoſe minute inſects their only ſubſiſtence. Though they are of different figures and ſizes, yet in general they go under one common name of the ant-bear; the peculiar length and ſlenderneſs of their ſnout, their ſingular appetites, and their manner of taking their prey, ſtriking us too ſtrongly to attend to the minute differences of their ſize or form.

They have been claſſed by Mr. Buffon into the larger Tamandua, the ſmaller Tamandua, and the Ant-eater. The longeſt of this kind is four feet long, from the tip of the ſnout to the inſertion of the tail; their legs are ſhort and armed with four ſtrong claws; their tail is long and tufted, and the animal often throws it on its back like the ſquirrel. The ſecond of this kind is not above eighteen inches long, the

tail is without hair, and it ſweeps the ground as the animal moves. The ant-eater, which is the third variety, is ſtill ſmaller than either of the former, as it is not above ſeven inches from the tip of the ſnout to the inſertion of the tail. The two former are of a brown duſky colour, but this of a beautiful reddiſh, mixed with yellow; tho' they differ in figure, they all reſemble each other in one peculiarity, which is the extreme ſlenderneſs of their ſnout, and the amazing length of their tongue.

The ſnout is produced in ſo diſproportionate a manner, that the length of it makes near a fourth part of the whole figure. A horſe has one of the longeſt heads of any animal we know, and yet the ant-bear has one above twice as long, in proportion to its body. The ſnout of this animal is almoſt round and cylindrical; it is extremely ſlender, and is ſcarce thicker near the eyes than at its extremity. The mouth is very ſmall, the noſtrils are very cloſe to each other, the eyes are little, in proportion to the length of the noſe, the neck is ſhort, the tongue is extremely long, ſlender, and flatted on both ſides; this it keeps generally doubled up in the mouth, and is the only inſtrument by which it finds ſubſiſtence; for the whole of this tribe are entirely without teeth, and find ſafety

De Seve del. Js. Taylor sculp.

The Ant Bear.

only in the remotenefs and fecurity of their retreat.

If we examine through the various regions of the earth, we fhall find that all the moft active, fprightly, and ufeful quadrupedes have been gathered round man, and either ferved his pleafures, or ftill maintained their independence by their vigilance, their cunning, or their induftry. It is in the remote folitudes that we are to look for the helplefs, the deformed, and the monftrous births of nature. Thefe wretched animals being incapable of defending themfelves, either by their agility, or their natural arms, fall a prey to every creature that attacks them; they therefore retire for fafety into the darkeft forefts, or the moft defert mountains, where none of the bolder, or fwifter animals chufe to refide.

It may well be fuppofed that an animal fo helplefs as the ant-bear is, with legs too fhort to fit it for flight, and unprovided with teeth to give it power of refiftance, is neither numerous, nor often feen; its retreats are in the moft barren and uncultivated parts of South-America. It is a native only of the new continent, and entirely unknown to the old. It lives chiefly in the woods, and hides itfelf under the fallen leaves. It feldom ventures from

its retreat, and the induſtry of an hour ſupplies it with ſufficient food for ſeveral days together. Its manner of procuring its prey, is one of the moſt ſingular in all natural hiſtory; as its name implies, it lives entirely upon ants and inſects; theſe, in the countries where it is bred, are found in the greateſt abundance, and often build themſelves hills, five or ſix feet high, where they live in community. When this animal approaches an ant-hill, it creeps ſlowly forward on its belly, taking every precaution to keep itſelf concealed, till it comes within a proper diſtance of the place where it intends to make its banquet; there lying cloſely along at its length, it thruſts forth its round red tongue, which is often two feet long, acroſs the path of theſe buſy inſects, and there lets it lye motionleſs for ſeveral minutes together. The ants of that country, ſome of which are half an inch long, conſidering it as a piece of fleſh accidentally thrown before them, come forth and ſwarm upon it in great numbers, but wherever they touch, they ſtick; for this inſtrument is covered with a ſlimy fluid, which, like bird-lime, entangles every creature that lights upon it. When therefore the ant-bear has found a ſufficient number for one morſel, it inſtantly draws in the tongue, and devours

them all in a moment; after which it ſtill continues in its poſition, practiſing the ſame arts until its hunger is entirely appeaſed; it then retires to its hiding-place once more, where it continues in indolent exiſtence, till again excited by the calls of hunger.

Such is the luxurious life of a creature, that ſeems of all others the moſt helpleſs and deformed. It finds ſafety in its hiding-places from its enemies, and an ample ſupply in ſome neighbouring ant-hill, for all its appetites. As it only tries to avoid its purſuers, it is ſeldom diſcovered by them; yet helpleſs as this animal is, when driven to an extremity, though without teeth, it will fight with its claws, with great obſtinacy. With theſe arms alone, it has often been found to oppoſe the dog, and even the jaguar. It throws itſelf upon its back, faſtens upon its enemy with all its claws, ſticks with great ſtrength and perſeverance, and even after killing its invader, which is ſometimes the caſe, does not quit its hold, but remains faſtened upon him with vindictive deſperation.

CHAP. XXII.

Of the Sloth.

OF the Sloth there are two different kinds, diſtinguiſhed from each other by their claws; the one, which in its native country is called the Unan, having only two claws upon each foot, and being without a tail; the other, which is called the Ai, having a tail and three claws upon each foot. The unan has the ſnout longer, the ears more apparent, and the fur very different from the other. It differs alſo in the number of its ribs, this having forty-ſix, while the ai has but twenty-eight. Theſe differences, however, which though very apparent, have been but little regarded in the deſcription of two animals which ſo ſtrongly reſemble each other in the general out-lines of their figure, in their appetites, and their helpleſs formation.

They are both, therefore, deſcribed under the common appellation of the ſloth, and their habitudes well deſerve our wonder and curioſity. Nature ſeems cramped and conſtrained in their formation; other animals are often in-

dolent from choice, these are slow from necessity; the ai, from which I shall take my description, and from which the other differs only in the slight particulars above-mentioned, and in being rather more active, is of about the size of a badger. Its fur is coarse and staring, somewhat resembling dried grass; the tail very short, and scarce appearing; the mouth extending from ear to ear; the eye dull and heavy; the feet armed with three claws each, and made so short, and set on so aukwardly, that a few paces is often the journey of a week; but though the feet are short, they are still longer than its legs, and these proceed from the body in such an oblique direction, that the sole of the foot seldom touches the ground. When the animal therefore is compelled to make a step forward, it scrapes on the back of the nails along the surface, and wheeling the limbs circularly about, yet still touching the ground, it at length places its foot in a progressive position; the other three limbs are all brought about with the same difficulty; and thus it is seen to move, not above three feet in an hour. In fact, this poor creature seldom changes place but by constraint, and when impelled by the severest stings of hunger.

The ſloth ſeems to be the meaneſt and moſt ill-formed of all thoſe animals that chew the cud; it lives entirely upon vegetable food, on the leaves, the fruit, and the flowers of trees, and often even on the very bark, when nothing elſe is left on the tree for its ſubſiſtence. Like all other ruminant animals, it has four ſtomachs; and theſe requiring a large ſhare of proviſion to ſupply them, it generally ſtrips a tree of all its verdure in leſs than a fortnight. Still however it keeps aloft, unwilling to deſcend, while any thing remains that can ſerve it for food; it therefore falls to devouring the bark, and thus in a ſhort time kills the tree upon which it found its ſupport. Thus deſtitute of proviſions above, and crawling ſlowly from branch to branch, in hopes of finding ſomething ſtill left, it is at laſt obliged to encounter all the dangers that attend it below. Though it is formed by nature for climbing a tree with great pain and difficulty, yet it is utterly unable to deſcend; it therefore is obliged to drop from the branches to the ground, and as it is incapable of exerting itſelf to break the violence of its deſcent, it drops like a ſhapeleſs heavy maſs, and feels no ſmall ſhock in the fall. There, after remaining ſome time torpid, it prepares

for a journey to ſome neighbouring tree; but this of all migrations is the moſt tedious, dangerous, and painful; it often takes a week in crawling to a tree not fifty yards diſtant; it moves with imperceptible ſlowneſs, and often baits by the way. All motions ſeem to torture it, every ſtep it takes it ſets forth a moſt plaintive, melancholy cry, which from ſome diſtant ſimilitude to the human voice, excites a kind of diſguſt, mixed with pity. This plaintive ſound ſeems its chief defence, few quadrupedes appear willing to interrupt its progreſs, either that the fleſh is offenſive, or that they are terrified at its cries. When at length they reach their deſtined tree, they mount it with much greater eaſe than when they moved upon the plain. They fall to with famiſhed appetite, and as before, deſtroy the very ſource that ſupplies them.

How far theſe may be conſidered as the unfiniſhed productions of nature, I will not take upon me to determine; if we meaſure their happineſs by our ſenſations, nothing, it is certain, can be more miſerable; but it is probable, conſidered with regard to themſelves, they may have ſome ſtores of comfort unknown to us, which may ſet them upon a level with ſome

other inferior ranks of the creation; if a part of their life be expoſed to pain and labour, it is compenſated by a larger portion of plenty, indolence, and ſafety. In fact, they are formed very differently from all other quadrupedes, and it is probable, they have different enjoyments. Like birds, they have but one common vent for the purpoſes of propagation, excrement, and urine. Like the tortoiſe, which they reſemble, in the ſlowneſs of their motion, they continue to live ſome time after their nobler parts are wounded, or even taken away. They bear the marks of all thoſe homely-formed animals, that, like rude machines, are not eaſily diſcompoſed,

* Its note, acccording to Kircher, is an aſcending and deſcending hexachord, which it utters only by night; its look is ſo piteous, as to move compaſſion; it is alſo accompanied with tears, that diſſuade every body from injuring ſo wretched a being. Its abſtinence from food is remarkably powerful; one that had faſtened itſelf by its feet to a pole, and was ſo ſuſpended acroſs two beams, remained forty days without meat, drink, or

* Pennant's Synopſis.

ſleep; the ſtrength of its feet is ſo great, that whatſoever it ſeizes on, cannot poſſibly be freed from its claws. A dog was let looſe at the above-mentioned animal, taken from the pole; after ſome time the ſloth laid hold of the dog with its feet, and held him four days, till he periſhed with hunger.

CHAP. XXIII.

The Gerbua.

THIS animal as little reſembles a quadrupede, as that which has been deſcribed in a former chapter. If we ſhould ſuppoſe a bird, diveſted of its feathers, and walking upon its legs, it might give us ſome idea of its figure. It has four feet indeed, but in running or reſting, it never makes uſe of any but the hinder. The number of legs, however, do not much contribute to any animal's ſpeed; and the gerbua, though properly ſpeaking, furniſhed but with two, is one of the ſwifteſt creatures in the world.

The gerbua is not above the ſize of a large rat, and its head is ſloped ſomewhat in the manner of a rabbit, the teeth alſo are formed like thoſe of the rat kind, there being two cutting teeth in each jaw; it has a very long tail, tufted at the end; the head, the back, and ſides are covered with large aſh-coloured ſoft hair; the breaſt and belly is whitiſh, but what moſt deſerves our attention in the formation of this little animal, is the legs; the fore-legs are not an inch long, with four claws and a thumb upon each, while the hinder-legs are two inches and a quarter, and exactly reſemble thoſe of a bird, there being but three toes, the middlemoſt of which is longeſt.

The gerbua is found in Egypt, Barbary, Paleſtine, and the deſerts between Buſſerah and Aleppo; its hind legs, as was ſaid before, are only uſed in running, while the fore-paws, like thoſe of a ſquirrel, graſp its food, and in ſome meaſure perform the office of hands. It is often ſeen by travellers as they paſs along the deſerts, croſſing their way, and jumping ſix or eight feet at every bound, and going ſo ſwiftly, that ſcarce any other quadrupede is able to overtake them. They are a lively, harmleſs race of animals, living entirely upon vegetables, and burrowing like rabbits in the ground. Mr.

Pennant tells us of two that were lately brought to London, that burrowed almoſt through the brick wall of the room where they were kept; they came out of their hole at night for food, and when caught, were much fatter and ſleeker than when confined to their burrows. A variety of this animal is found alſo in Siberia and Circaſſia, and is, moſt probably, common enough over all Aſia. They are more expert diggers than even the rabbit itſelf; and when purſued for a long time, if they cannot eſcape by their ſwiftneſs, they try to make a hole inſtantly in the ground, in which they often bury themſelves deep enough to find ſecurity before their purſuers come up. Their burrows, in ſome ſome places, are ſo thick, as to be dangerous to travellers, the horſes perpetually falling in them. It is a provident little animal, and lays up for the winter. It cuts graſs in heaps of a foot ſquare, which when dried, it carries into its burrow, therewith to ſerve it for food, or to keep its young warm during the rigours of the winter.

But of all animals of this kind, that which was firſt diſcovered and deſcribed by Mr. Banks, is the moſt extraordinary. He calls it the kanguroo; and though from its general outline, and the moſt ſtriking peculiarities of its figure,

it greatly reſemblies the gerbua, yet it entirely differs, if we conſider its ſize, or thoſe minute diſtinctions which direct the makers of ſyſtems in aſſorting the general ranks of nature.

The largeſt of the gerbua kind which are to be found in the ancient continent, do not exceed the ſize of a rabbit. The kanguroo of New Holland, where it is only to be found, is often known to weigh above ſixty pounds, and muſt conſequently be as large as a ſheep. Although the ſkin of that which was ſtuffed and brought home by Mr. Banks, was not much above the ſize of a hare, yet it was greatly ſuperior to any of the gerbua kind that have been hitherto known, and very different in many particulars. The ſnout of the gerbua, as has been ſaid, is ſhort and round, that of the new-diſcovered animal long and ſlender; the teeth alſo entirely differ; for as the gerbua has but two cutting teeth in each jaw, making four in all, this animal, beſides its cutting teeth, has four canine teeth alſo; but what makes a more ſtriking peculiarity, is the formation of its lower jaw, which, as the ingenious diſcoverer ſuppoſes, is divided into two parts, which open and ſhut like a pair of ſciſſars, and cut graſs, probably this animal's principal food. The head, neck, and ſhoulders are very ſmall in pro-

portion to the other parts of the body; the tail is nearly as long as the body, thick near the rump, and tapering towards the end, the ſkin is covered with a ſhort fur, excepting the head and the ears, which bear a ſlight reſemblance to thoſe of the hare. We are not told, however, from the formation of its ſtomach, to what claſs of quadrupedes it belongs; from its eating graſs, which it has been ſeen to do, one would be apt to rank it among the ruminant animals; but from the canine teeth which it is found to have, we may on the other hand ſuppoſe it to bear ſome relation to the carnivorous. Upon the whole, however, it can be claſſed with none more properly, than with animals of the gerbua kind, as its hind legs are ſo much longer than the fore; it moves alſo preciſely in the ſame manner, taking great bounds of ten or twelve feet at a time, and thus ſometimes eſcaping even the fleeteſt greyhound, with which Mr. Banks purſued it. One of them that was killed, proved to be good food; but a ſecond, which weighed eighty-four pounds, and was not yet come to its full growth, was found to be much inferior.

With this laſt deſcribed and laſt diſcovered animal, I ſhall conclude the hiſtory of quadrupedes, which of all parts of natural knowledge

ſeems to have been deſcribed the moſt accurately. As theſe, from their figure, as well as their ſagacity, bear the neareſt reſemblance to man, and from their uſes or enmities are the moſt reſpectable parts of the inferior creation, ſo it was his intereſt, and his pleaſure, to make himſelf acquainted with their hiſtory. It is probable therefore that time, which enlarges the ſphere of our knowledge in other parts of learning, can add but very little to this. The addition of a new quadrupede to the catalogue already known, is of no ſmall conſequence, and happens but ſeldom; for the number of all is ſo few, that wherever a new one is found, it becomes an object worthy our beſt attention. It may take refuge in its native deſerts from our purſuits, but not from our curioſity.

But it is very different with the inferior ranks of the creation; the claſſes of birds, of fiſhes, and of inſects, are all much more numerous, and more incompletely known. The quadrupede is poſſeſſed of no arts of eſcaping, which we are not able to overcome; but the bird removes itſelf by its ſwiftneſs, the fiſhes find protection in their native element, and inſects are ſecured in their minuteneſs, numbers, and variety. Of all theſe therefore, we have but a very inadequate catalogue, and

though

though the liſt be already very large, yet every hour is adding to its extent.

In fact, all knowledge is pleaſant only as the object of it contributes to render man happy, and the ſervices of quadrupedes being ſo very neceſſary to him in every ſituation, he is particularly intereſted in their hiſtory: without their aid, what a wretched and forlorn creature would he have been! the principal part of his food, his cloathing, and his amuſements are derived wholly from them, and he may be conſidered as a great lord, ſometimes cheriſhing his humble dependents, and ſometimes terrifying the refractory, to contribute to to his delight and conveniencies.

The horſe and the aſs, the elephant, the camel, the lama, and the rein-deer, contribute to eaſe his fatigues, and to give him that ſwiftneſs which he wants from nature. By their aſſiſtance, he changes place without labour; he attains health without wearineſs; his pride is inlarged by the elegance of equipage, and other animals are purſued with a certainty of ſucceſs. It were happy indeed for man, if while converting theſe quadrupedes to his own benefit, he had not turned them to the deſtruction of his fellow-creatures; he has employed ſome of them for the purpoſes of war, and they have con-

formed to his noxious ambition with but too fatal an obedience.

The cow, the ſheep, the deer, and all their varieties, are neceſſary to him, though in a different manner. Their fleſh makes the principal luxuries of his table, and their wool or ſkins the chief ornament of his perſon. Even thoſe nations that are forbid to touch any thing that has life, cannot wholly diſpenſe with their aſſiſtance. The milk of theſe animals makes a principal part of the food of every country, and often repairs thoſe conſtitutions that have been broken by diſeaſe or intemperance.

The dog, the cat, and the ferret, may be conſidered as having deſerted from their fellow-quadrupedes, to liſt themſelves under the conduct and protection of man. At his command they exert all their ſervices againſt ſuch animals as they are capable of deſtroying, and follow them into places where he himſelf wants abilities to purſue.

As there is thus a numerous tribe, that he has taken into protection, and that ſupplies his neceſſities and amuſements, ſo there is alſo a ſtill more numerous one, that wages an unequal combat againſt him, and thus call forth his courage and his induſtry. Were it

not for the lion, the tyger, the panther, the rhinoceros, and the bear, he would ſcarce know his own powers, and the ſuperiority of human art over brutal fierceneſs. Theſe ſerve to excite, and put his nobler paſſions into motion. He attacks them in their retreat, faces them with reſolution, and ſeldom fails of coming off with a victory. He thus becomes hardier and better in the ſtruggle, and learns to know and to value his own ſuperiority.

As the laſt mentioned animals are called forth by his boldeſt efforts, ſo the numerous tribe of the ſmaller vermin kind excite his continual vigilance and caution; his various arts and powers have been no where more manifeſt, than in the extirpation of thoſe that multiply with ſuch prodigious fecundity. Neither their agility nor their minuteneſs can ſecure them from his purſuits; and though they may infeſt, they are ſeldom found materially to injure him.

In this manner we ſee, that not only human want is ſupplied, but that human wit is ſharpened, by the humbler partners of man in the creation. By this we ſee, that not only their benefits, but their depredations are uſeful, and that it has wiſely pleaſed Providence to place us like victors in a ſubdued country, where we

have all the benefit of conqueſt, without being ſo ſecure, as to run into the floth and exceſſes of a certain and undiſturbed poſſeſſion. It appears therefore, that thoſe writers who are continually finding immediate benefit in every production, ſee but half way into the general ſyſtem of nature. Experience muſt every hour inform us, that all animals are not formed for our uſe; but we may be equally well aſſured, that thoſe conveniencies which we want from their friendſhip, are well repaid by that vigilance which we procure from their enmity.

END OF THE FOURTH VOLUME.